WIRELESS INSTITUTE OF AUSTRALIA

Amateur Radio

A Practicable
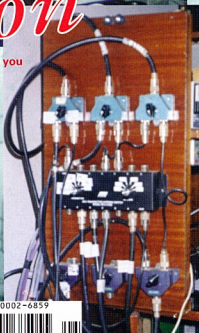**Superhet Receiver**
for 1.8 to 2.0 MHz (and HF)
by Drew Diamond, VK3XU

VK5GN's
MAGNIFICENT
Obsession

"at the cross roads look left and you
will see the Radio Station"

The ISS Project
School children
contact Space Station
astronauts

Bright ideas:
Cheap and *Cheerful* Varicap Diodes

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General

Technical

Columns

Our cover this month

**Martin Luther VK5GN with his radio station on 30 acres 50km north of
Adelaide, away from complaining neighbours.**

For the full story turn to page 11

Editorial Comment

Colwyn Low VK5UE
edarmag@chariot.net.au

WIA is for all amateurs

Welcome to all our long standing members and our new readers.

I am glad some of you have decided to purchase the magazine again. The WIA is the Amateur Radio organisation for all Australian Amateurs and so it's good to be able to spread the word to non-members, whom we also have to represent to Government bodies. Like all organisations we have a diverse range of views amongst our members and hopefully we are learning to talk, debate, argue our different points of view in a democratic way and move with the majority decision. So with the Federal Convention this month I hope that reason will prevail.

Amateurs are less numerous than they were a few decades ago and our ranks are thinning. We are becoming a group of balding grey haired old men (page 18 !!!!!). However there are things we do which excite people. Look at the article on the Zeehan Primary School talking to the International Space Station Astronauts on page 18. Certainly, some of the things we used to do can now be done more easily on the cell phone and the Internet, but there are still lots of personal challenges in building electronic equipment which will do both mundane and exotic things. There is still the thrill of getting a new mode to work with our station equipment; there is still the thrill of getting a response from a station far away. Far away, depending on the frequency used, can be thousands of kilometres or just a few.

Excitement comes in other ways. I have been looking for a Bird Wattmeter for about a year and in April I attended the Adelaide North East Radio Clubs Bring and Buy sale. I walked round once and nothing caught my eye. Later I'm just filling in time and there it was in full view, one Bird Type 43. When I got it home I went looking for sources of the parts to customise it to my requirements. I wanted N connectors and UHF plug-ins so I was more than surprised to find it is still in production and everything I needed is in the Bird Electronic catalogue. The reason I mention this is that this meter is a piece of classic design and great craftsmanship. The principals used to design it are basic but the instrument will still be sought after when it becomes part of my Deceased Estate. Now all I have to do is make time to use it.

There are a few contests and activities some or all of us should be thinking of taking part in. The Queens Golden Jubilee GB50 activity, the VK/Trans Tasman Contest, the GippsTech Conference and the Remembrance Day Contest. Now is the time to check the equipment, to decide how we will participate and possibly talk a few of our friends into participating as well.

Enjoy your Amateur Radio and let others know Amateur Radio is fun!

73 Colwyn VK5UE

NEW WIA MEMBERS

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of APRIL.

Mr H M Brown	VK4ZB Mr G L Szatmary
L21096 Mr R Morgan	VK6YNE Mr N J Elrick
L21097 Mr P T Lark	VK7KHZ Mr S Lynd
VK1AI Mr G J Parkhurst	VK7KVB Mr D P Van Beek
VK2MSC Mr S D Salmon	VK7KYR Mr K G Rappell
VK4BLE Mr L E Pritchard	VK7ZZB Mr K A Briggs
VK4BQL Mr L G Heal	ZS6QW Mr S Gorgevik
VK4CO Ms V M Meachen	

Ernest Hocking VK1LK
email: president@wia.org.au

End of year report

It is some 12 months now since I took over the role of WIA Federal president from Peter Naish.

Through this last year I have had a chance to participate in the operation of the WIA at first hand. Above all I have been struck by the incredible energy and passion that all amateurs have for our hobby.

However for all of the good points there always seems to be one obstacle preventing things from happening. I personally find this very intriguing. Why is it that this bunch of people, who do things that many people can only dream about and marvel at, cannot seem to attract new blood to the hobby? Is it because we are too critical of our own achievements and are worried that they might not be good enough to be let loose on the world? I am sure that none of us really believes that.

In the real world people make mistakes. The first release of a product often has a problem of some description, be it a publication with typographic errors, a business trip that does not work out as hoped, or a computer with a hardware fault. As amateur radio operators we should not be frightened or ashamed to tell people what an exciting hobby amateur radio is.

I believe that amateur radio has a great future in Australia. To make this happen, we the amateurs radio operators of Australia, need to sell our story. Over the last year I have had the opportunity to correspond with many amateurs who provide their time and expertise to others to help them pass the examinations needed to hold an amateur radio licence. I have also corresponded with many more of you who volunteer your time and experience at local, state, and national level to advance the cause of amateur radio. For all of your efforts I would like to extend a very big thank you and ask that you continue to be excellent ambassadors for amateur radio.

In this last year we have also worked hard to promote the cause of amateur radio via the work of the Productivity Commission review and submissions made to the ACA in terms of taking on a greater role in administering the examination regime. Here the theme is one of self regulation and many of us are keen to take up the challenge and make entry into amateur radio simpler. However we need to go further. There is much that can be done to raise the profile of amateur radio in order to drive home the message that the hobby has a lot to offer. If we are to see concessions for pensioners, recognition of the benefits of amateur radio in the education system or changes to the current licence conditions then we need to increase our profile in Government.

> **Why is it that this bunch of people, who do things that many people can only dream about and marvel at, cannot seem to attract new blood to the hobby?**

We need to get the message not just to the ACA but also to those departments that administers pensions and education. The story doesn't just stop with Government. We also need to sell our message to private industry. Amateurs are significant consumers of electronics as well as contributors to many aspects of the Australian electronics industry. As such we can and do make a valuable contribution to the Australian economy. We need to make people aware of what amateur radio has to offer.

What then can amateurs do to help to make this happen? If you have the time to contribute, or the contacts in government and industry that can help us to raise our profile then please make the effort to contact either myself or your local WIA representative and make yourself known. Together we can make a difference.

AR matters

Hopefully by now many of you will have seen copies of AR on sale at the newsstands. I know of at least two news agents in Canberra that have copies on their shelves. Over the last few days I have even watched them sell. However we need to know what readers think of AR in its current format. Due to timing difficulties we missed getting the promised survey into the April issue. With this issue I hope we have resolved these problems and would ask as many of you as possible to respond to the survey. For those that prefer, a copy of the survey is also available on the WIA web page at www.wia.org.au.

Federal Convention and AGM.

By the time this issue of AR reaches you the WIA AGM and convention should have been held in Melbourne. This year's convention promises to be an exciting one with the many challenges raised over the last year providing a great opportunity for vigorous discussion on future strategy relating to issues as wide ranging as WIA structure, future foundation licence categories, through to setting budgets for the next 12 months. In keeping with member's requests I will try to get a summary of the results of the meeting to members as quickly as possible after the convention.

73s and I look forward to hearing your views on any amateur radio related matters

Ernest Hocking VK1LK

SURVEY
on pages 29 and 30

A Practicable Superhet Receiver for 1.8 to 2.0 MHz (and HF)

Drew Diamond, VK3XU,
45 Gatters Road,
WONGA PARK, 3115.

Increased interest in 160 metres has caused me to build a new receiver for 'Top-Band', which is arguably one of the most challenging in terms of performance. These designs generally use new, or hard-to-get esoteric parts. Consider that ground-wave signals from powerful local stations, both amateur and broadcast, will arrive at the input right along with those sought-after weak DX signals. In addition, there may be (typically) loud static crashes, impulse noise, and a host of spurs from domestic appliances. In such an environment the receiver must therefore possess the best possible signal handling attributes.

Amateur and professional publications occasionally have circuit details for receivers with impressive claimed performance. These designs generally use new, or hard-to-get esoteric parts. Australian experimenters are quite familiar with the usual story in this regard: "Yes mate, we can get those for you, minimum order; one hundred units at $14 each, six to eight weeks delivery"- when all we need is perhaps two. The aim for this model was to produce a receiver with at least adequate, and hopefully very good performance using locally available parts.

Much of a superheterodyne receiver's ability to cope with strong (unwanted) signals derives from the first mixer, which is the stage in the set where some undesirable effects can occur if it is not done properly. After much study and experiment, it was decided to employ a switched CMOS gate mixer (Refs. 1-6), it being one of the strongest practicable circuits using conventional components. Adequate SSB and CW bandwidth is obtained with a (now) conventional crystal ladder filter at 4 MHz. The idea of a dedicated AGC-controlled IF amplifier chip has been rejected because- in my experience, these devices always seem to be difficult to buy in small quantities. So an IF amplifier which uses ordinary discrete components is employed. One of the most troublesome aspects of a receiver project is the AGC problem- excellent AGC generally dictates quite complex electronics. Never-the-less, for this model, very satisfactory AGC is obtained with fairly simple circuitry and no fancy parts. The basic 1.8 - 2 MHz "tuneable IF" shall also form the basis of an amateur bands HF receiver by the inclusion of an internal switched frequency converter- also employing the CMOS mixer scheme (the subject of a follow-up article).

The prototype works well, has nice signal handling and AGC characteristics and is pleasant to operate. Sensitivity is 0.2 microvolts for 10 dB S + N : N. Selectivity is about 2 kHz, allowing U/LSB SSB, CW and AM (as SSB) reception. Third-order IMD dynamic range (according to the ARRL Lab. method outlined in Ref. 7) is in excess of 90 dB (my measurement was limited by phase-noise from one of the generators). Audio output varies only 6 dB for an input signal range of 10 uV to 3 mV (an effective AGC range of 50 dB, which includes the greater portion of input signal levels normally encountered). Rejection of the IF (4 MHz) is 80 dB, and image rejection (7.6 MHz) is 100 dB. There is one just audible internally-generated spur at 2.0 MHz, whose equivalent value is less than 0.1 uV. In practical terms, with a 180 foot long inverted-L antenna connected, and the receiver at maximum gain, there have been no instances of overload or cross-modulation from (very) strong local stations, nor is the receiver at all bothered by nearby BC, TV and FM transmitters.

Circuit

Input signals are first routed through a two-resonator 1.8 - 2.0 MHz band-pass filter (see top left-hand corner, Fig. 1). The usual Butterworth circuit has been re-jigged to the pi configuration to allow the trim capacitor rotors to ground, and which places the coils in series with the input, thus offering far greater attenuation to unwanted HF and VHF signals. Although seldom required, a simple pot style attenuator is fitted at the input. Sensitivity (and S : N) is substantially improved by the inclusion of a judicious amount of RF gain- about 10 dB, supplied by a single 2N3053 (or similar) bipolar transistor Q1 in a conventional ('strong') broadband class A amplifier.

The switched CMOS mixer at U1 was first outlined (I think) in Ref. 1. Hannes Coetzee applied the idea to his direct conversion receiver project in Refs. 2 and 3, and several other experimenters
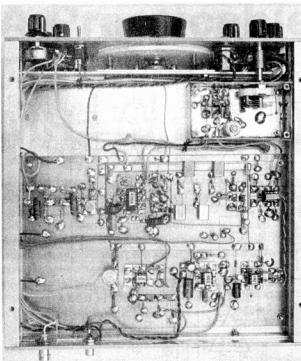
Figure 1

Photo 2: Below chassis; main circuit board (VXBFO box, lid removed)

have written about their success also (Refs. 4-6). According to my measurements, the CMOS mixer has significantly lower loss than a ring-diode, yet the local oscillator power requirement is greatly reduced (and hence also, the risk of internal spur production). It is an easy matter to drive the CMOS switch(es) 180 degrees out of phase from another CMOS chip, such as a 74HC04. The only drawback with the CMOS mixer appears to be its frequency response, at present [using ordinary chips] limited to about 21 MHz.

A conventional Hartley LC circuit, maintained with an MPF102 FET at Q7 supplies our local oscillator (L.O.) signal, and is adjustable from 5.8 to about 6 MHz. The first gate of the 74HC04 CMOS HEX inverter chip U2 is biased for linear operation with a 100 k resistor. The necessary 180 degree out of phase square-wave drive signals for the CMOS switch mixer are applied to each of two parallel connected gates of the '4066 chip at U1.

Ideally, the output of the CMOS mixer (as with any "commutated" type mixer) should look into 50 ohms resistive for all frequencies present at the mixer's output (not just the expected "sum and difference" products), which job is normally done with a diplexer. After experimenting with various circuits, it was found that a quite simple diplexer, consisting of a tank comprised of a 2.2 uH coil and 680 pF capacitor, tuned to the wanted IF frequency (4 MHz), and a series 51 ohm 'dump' resistor (where all the unwanted products are dissipated) did the job rather well.

The first stage of the IF amplifier is a common-gate connected MPF102 FET at Q2, thus providing a fairly low impedance termination for the wanted 4 MHz output from the mixer/diplexer network. The drain load of the first IF amp is comprised of the emitter-collector of a 2N2222 transistor Q3 and 3.3 k resistor in series, which provides a pretty good match into the crystal ladder filter. Note that the effective resistance of the series 2N2222 (and hence, the gain of that stage) can be varied by application of a suitable dc signal into the base of the transistor. The crystal filter looks into the gate of the second IF amplifier (another MPF102 Q4), this time in common source mode. The filter is properly terminated with a 1.5 k resistor at the gate. A second 2N2222 (Q5)/3.3 k series network is again used as drain load.

Because the product detector has only to deal with the few signals that have squeezed through the crystal filter and gain-controlled IF amplifier, we can employ a ubiquitous NE (SA) 602 at U3, it being easy to use in this application, and actually provides about 15 dB conversion (from IF to AF) gain. Variable crystal BFO (VXBFO) signal is applied to the OSC port at pin 6. A 4 MHz ceramic resonator gives a much larger frequency pull than is obtainable with an ordinary crystal. The resonator is powered by an MPF102 at Q6, and may be varied in frequency right through the band-pass of the crystal filter, allowing upper or lower sideband reception, by placing the BFO's station at one or the other side of the filter. Also, under crowded band conditions, it is a very handy feature in CW reception to be able to place the BFO signal somewhere near the middle of the filter's band-pass to reduce close-in QRM.

Product-detected audio is raised to 'speaker/headphone level with a conventional LM741-386 amplifier, U4-U5. AGC signal is picked off at the output of the '741 (U4), and applied to a two-diode (BAT-46) voltage doubler detector. The dc level thus obtained is applied to a second '386 at U6, used here as a dc amplifier. When no signal is present, the '386 output at pin 5 rests at about half rail; 6 Vdc. About 4 V worth of this dc signal is used as AGC voltage, and is applied simultaneously to the bases of the 2N2222 IF amp partial drain loads, Q3 and Q5. When a signal is tuned in, or an existing signal strength increases, the output dc level will drop proportionately, thus causing the IF amp gain to fall, thereby holding the output at a reasonably constant level.

A back to back pair of diodes are wired across the feedback resistor of the '741 amp U4 (it being one of the main gain blocks) in order to clip transient pulses which are too fast for the AGC loop. If desired, under some operating conditions, an additional 22 uF capacitor may be switched in to provide a longer follow-on (or Slow) AGC effect. AGC action thus obtained is (perhaps) surprisingly smooth. IF gain may be manually adjusted by use of the 100 k pot at the output of U6. The 1 mA 'S' meter is in a virtual bridge circuit, and provides a roughly logarithmic indication of signal strength, so that a 1 uV signal deflects about 0.05 mA, and a 50 uV (S9) signal gives about 0.5 mA or half-scale.

A 50 kHz calibration signal source (Fig. 2), derived from a 5 MHz crystal, is provided so that the dial may be set precisely on the 50 kHz marks. The calibrator is particularly handy when using the converter for HF access, as each converter crystal may be a little off it's nominal frequency. Furthermore, when going from USB to LSB, the effective dial calibration moves by about

2 kHz, so a cal. marker is necessary to maintain accuracy. The varactor diode (an ordinary 3 A power diode) at the source tap of the local oscillator tank gives a 'pull' range of about 10 kHz for band-to-band and U/LSB dial calibration.

Internal 12 V and 6 V regulated rails are supplied by 7812 and 7806 three-terminal regulator chips U7 and U8, sourced by a conventional transformer-and-diode-bridge circuit.

Construction

My home-made aluminium enclosure measures 250 x 250 x 120 mm LWH, and is made in similar style to that described in Ref. 9. Case size is rather dictated by chosen dial type, and whether an internal converter for some HF bands is desired. A smaller dial and single-band operation would allow a substantial reduction in size. Similarly, the speaker may be internal if desired (the set does not suffer unduly from microphonics), although a separate speaker (as I prefer) gives a cleaner sound.

All board assemblies for the prototype are made 'paddyboard' style (if you are new to paddyboard construction, please see Ref. 8). But just about any wiring method that you are comfortable with, including 'ugly' over a plain PC board ground-plane should work satisfactorily, provided that all signal carrying component leads are made as short as practicable. The same construction method has been employed for the power supply, local oscillator, VXBFO, crystal calibrator and HF converter.

It is suggested that the various assemblies should be tackled in turn as time, materials and enthusiasm permit. The successful completion of one part should give spur to carry on with the next, and so on. I suggest that the power supply board be made first. Power supply board measures 70 x 70 mm, and is mounted upon the rear panel. The regulator chips may be attached to pad boards 'out-rigger' style so that they may be attached to the rear panel which acts as heat-sink for the regulator chips (they do not generate a lot of heat).

The main circuit board measures 225 x 150mm and is pictured in Photo 2, which shows the general paddyboard layout. It accommodates the 1.8 MHz input filter, RF amp. mixer, IF amp/xtal filter, product detector, AF amp and AGC amp. PC board strips carry 6 and 12 V rails around the board, and components are connected to these as required. All I.C.s are plugged into sockets, which are attached, with tinned copper wires, to appropriately sized paddyboard substrates, which in turn are glued upon the main board. I find that the best way to tackle the job is to cut a board to size, then study the circuit and fabricate pads, substrates and strips as required, and move the pieces around the board, chess fashion, until all components are seen to be easily accommodated. When you are sure that everything will fit nicely, pick up each piece in turn and super-glue it into position. Some stationers have "Krazy" super-glue, which is dispensed like a ball-point pen, and is much easier to apply than ordinary tube glue.

To keep the number of internally generated spurs down (especially when a HF converter is installed), the L.O. should be housed in a RF tight box. One made from printed circuit board is quite satisfactory, and not difficult to make. The L.O. board measures 125 x 55 mm, with walls about 45 mm high (Photo 3). Use a good quality, smooth rotating variable capacitor of about 15 pF for just over 200 kHz tuning range. The coil should be wound upon an 8 mm form. It has been found that formers made from genuine Biro (TM) pen barrel material have good Q and stability. The coil may be cemented to the base, or into a hole drilled in the side of the L.O. box. Solder a brass nut inside each corner so that a suitably sized lid, made from single or double sided PC material may be fitted.

The VXBO board measures 90 x 50 mm, with walls of 45 mm, and is made in a similar fashion to the L.O. assembly (Photo 2). Again use a good variable capacitor of about 15 or 20 pF. A lid is also recommended.

The crystal calibrator board (Photo 3) measures 160 x 45 mm. The three I.C.'s are fitted into sockets as described for the main board. The 5.0 MHz crystal may be set spot-on frequency by touching a screw-driver blade to pin 8 of the 74LS00 whilst listening to VNG's 5 MHz signal on a general coverage (or short-wave) receiver; then adjust the 40 pF trim cap for zero beat.

Your chassis/case may take just about any preferred form. The layout used for the prototype gives very good access to all assemblies, both during, and after
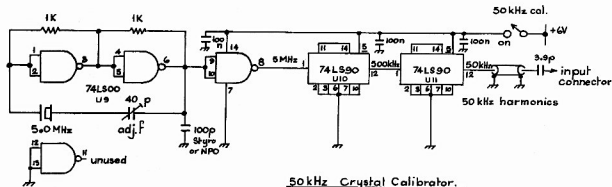

Fig 2   50 kHz Crystal Calibrator

Drawn: D.C.D.

Figure 2

construction. Tuning range is just over 200 kHz, so a pretty good dial will be necessary if acceptable frequency resolution is desired. My dial consists of a disc of 110 mm diameter, made from 3 mm opaque perspex, which, when calibrated with marks every 10 kHz gives quite good resolution by interpolation down to 1 kHz- good enough for most work. It is illuminated from behind with a 6 V/50 mA pea-lamp wired in series with another for the 'S' meter. A second disc, a 100 mm diameter piece of clear 3 mm perspex is a friction-fit into the front panel to act as cursor (a scribed radial line), and protect the calibration markings. An ordinary 6:1 planetary reduction drive is used to provide fine manual adjustment of L.O. frequency. An insulated flexible coupler should be interposed between the drive and capacitor spindle.

Use ordinary hook-up wire for all dc and 50 Hz connections, including power supply, 6 and 12 V supplies, AGC rail and S-meter. Note the twisted-pair connection between U3 and U4. The coax/shielded wire connections may be done with ordinary shielded wire (it is close to 50 ohms impedance, and so serves for RF and AF connections).

The power transformer should be located in such a position that it is at least 30 mm away from any active device, as it is possible for stray flux to affect P-N junctions (believed to be Hall-effect), and cause audible hum, or 50 Hz FM of an oscillator. The transformer in the prototype is mounted upon two 30 mm long aluminium spacer rods (the transformer is visible in Photo 3, but not the spacers).

Tune-up

With the means available to you, check that the power supply, L.O. and VXBFO are working. If an oscilloscope is on-hand, observe (with X10 probe) the 5 V p-p square waveforms at pins 11 and 10 of U2. Measure the L.O. frequency with a counter (or listen for the signal on another receiver) and adjust the 25 pF beehive trim cap so that, with the 15 pF tuning cap at full mesh, the L.O. generates about 5.790 MHz. Confirm that at least 6 MHz is generated with the tuning cap at minimum mesh. After some 10 minutes of warm-up, the signal should be quite stable. Similar for the VXBFO; observe a clean sine-wave signal at the source of Q6 of about 2 V p-p. Set the 15 pF tuning cap to mid-range, then adjust the 25 pF trim cap for 4.000 MHz. With the 15 pF variable cap, it should be possible to pull the VXBFO from about 3.995 to 4.005 MHz.

When the set is fully wired and checked for accuracy, pause and confirm that all polarised components are properly installed- pay particular attention to the I.C.'s- they must be plugged in correctly to avoid their possible destruction. When power is applied, you should hear just a soft hiss from the 'speaker with the AF and IF gain pots at maximum. Apply your finger upon a screw-driver blade to pin 2 or 3 of the '741. You should hear a buzz, indicating that the AF amp is working. Adjust the 500 ohm trim pot and zero the S-meter.

Connect an antenna to the input- a few metres of hook-up wire should do initially. Vary the VXBFO through its

Photo 3: Above chassis; power supply, crystal calibrator, LO (lid removed) and HF converter

range, it should be possible to sweep it from one end of the crystal filter pass-band to the other, heard as a ssss-shoosh-ssss sound, which indicates that the set is 'gainy', and probably working thus far. Tune around for a signal (or spur- from a TV or PC). Carefully peak and re-peak the input filter 100 pF trim caps for best gain and flatness as the receiver is tuned between 1.8 and 2 MHz. When an SSB or CW signal is tuned in, it should sound clean, undistorted and free of hum, fuzziness or other defects. Moderate to strong signals should cause the S-meter to deflect upwards, and strong signals shall not 'blast your ears off', indicating that the AGC circuit is working correctly.

To aid in any necessary troubleshooting, some typical key voltages are shown underlined on the circuit. In receiver work, one of the most difficult problems to trace is 'deafness'. A popular method is the 'half-split', where a known signal is introduced at a point about half way along a string of stages (such as a superhet). After first checking the vital items; supply rails, oscillators (their frequency and amplitude) and the op-amp dc levels, a suitable point in this set is at the input to the IF amp. Apply finger/screw-driver blade to the source of Q2. If the IF and AF stages are 'gainy', you should hear a buzz of signals and noise which happen to be on, or near 4 MHz. If you can do this, then the problem is probably between the RF input and mixer. Double-check the connections for the broadband transformer T1. The phasing, shown by the dots, must be correct if the mixer is to work properly. Measure the dc voltages around the RF amp Q1. Any reading which deviates greatly from that shown on the circuit would be a vital clue.

Parts

DSE, Jaycar and Altronics can supply most of the ordinary electronic components. The BAT-46 diodes (these replace OA91s) and crystals, marked 'DRT', and 100 pF trim caps were purchased from Jaycar (your filter crystals should all be of the same make). Additionally, the 4.0 MHz ceramic resonator, NE (SA) 602, Amidon cores, 1 nF feethru caps and 25 pF 'beehive' and other trim caps are available from Electronic World (03 9723 3860- will answer mail orders). For good stability, the 220 pF capacitor in the L.O. tank should be a 'styroseal' or silver mica, and the 33, 100 and 47 pF caps in the VXBFO should be NP0 ceramic types. All others (including coupling and bypass) may be monolithic or ordinary ceramic types. There are no known suppliers of new variable capacitors, but these are by no means rare items. Ask your mates at the radio club- or look for caps at the next hamfest. For the 15 pF variable cap in the L.O., use one of those excellent English dual ball-bearing types, if possible. See Hamads in AR for your local Amidon supplier.

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MARTIN LUTHER VK5GN

... a man who builds his life around amateur radio

**Based on an interview with
Colwyn Low VK5UE**

Martin came to Amateur radio in 1960. His great uncle had a shortwave radio that fascinated Martin. A very generous gift saw the old radio carried to a new home. School friends had an interest in radio and so together they got into crystal sets.

Later Martin was given a No 19 Set. (A WW2 vehicle mounted HF transceiver) for Christmas and he was firmly set on the path to Ham Radio. In 1966 he was licenced as G3VBX and operated with 10 W on 1.8 MHz AM. Everything homebrewed.

Then he moved to SSB but it took a lot of scrounging and hoarding of pocket money to get all the parts. The finished set operated on 1.8 and 3.5 MHz SSB. The final 807 was tuned by the "blue glow", as a meter was too expensive initially!

The collection of QSL cards was an important part of the activity. Today Martin counts his cards by the metre e.g. USA number 1 call area is 0.4m of cards! His log books alone take up over a metre of shelf.

Martin went to University College Bangor, North Wales and there met up with the Uni Radio Club who were UHF orientated and liked to climb Snowdonia's mountains in cold cloudy weather and work DX into Europe from Norway to Italy. They knew they were high enough when the big beams had to be pointed below horizontal to work into close in parts of the UK. The university club acquired a KW2000 and this was used to enter some HF contests. Pile-ups from the states for the GW contact on 10 metres further fired Martins enthusiasm for HF.

At this time he used his vacation jobs
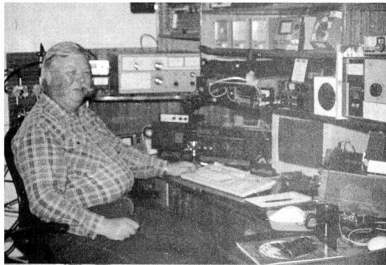
Martin Luther VK5GN at his console

to buy a FLDX400, while still using a home brew double conversion superhet receiver.

He moved to Australia in 1971 to VK4 as VK4VU. Lots more contesting from a suburban block and then portable, when he got serious and needed the best

Today the site has 5 x 70 foot towers. They carry a logperiodic for spotting and there are dedicated monobanders for 10 and 15. A 90ft vertical is dedicated to 1.8 MHz and 3.5MHz. and there are towers for VHF and UHF beams. When Martin gave me the instructions to reach VK5GN it ended up "at the cross roads look left and you will see the Radio Station". It *is* a radio station.

location and aerials. He used a 2 element Quad and a trap vertical initially. Later he moved to the rural fringe to a bigger block and better aerials, a four-element quad and two towers.

1984 brought the move to SA and Modbury and another suburban block again portable operation kept the interest

fired. A 30ft aluminium tower hoisted 2 element yagis on hilltops around South Australia especially fun on ten and fifteen.

Martin's personal situation allowed a move and in July 1991 he and Linda (VK5QP) purchased their current home about 50km north of Adelaide. With 30 acres set in a rural landscape on the Adelaide plains. Martin could now set up a "Serious Contest Station"

Today the site has 5 x 70 foot towers. They carry a logperiodic for spotting and there are dedicated monobanders for 10 and 15. A 90ft vertical is dedicated to 1.8 MHz and 3.5MHz. and there are towers for VHF and UHF beams. When Martin gave me the instructions to reach VK5GN it ended up "at the cross roads look left and you will see the Radio Station". It is a radio station.

Inside the shack all the feeders come to a switching panel. Care has been taken to ensure consistent matching and it is possible to switch aerials without having to rematch the transceiver. There are two

The VK5GN Radio Station

The Station hardware
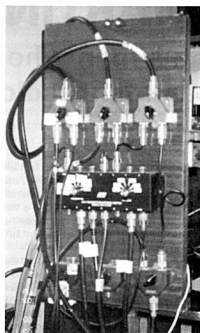
Antenna Switching Panel
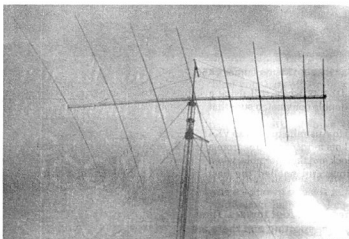
Log Periodic

The Towers
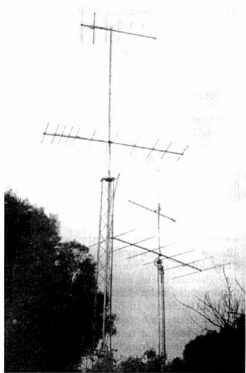
VHF and UHF Beams

transceivers and one is used for monitoring/spotting and the other is the operating unit. A computer logging system and automatic calling unit complete the basic station. Martin uses software control and the station is integrated with the computer

Like all good Amateur Stations this one continues to evolve. Martin is planning new towers for a better presence on the 20 and 40 metre bands as well as working on new microphone and audio feeds for cleanest sounding signals.

A quick look at the QSO analysis on the computer showed that between 1992 and 2001 there were 62,000 contacts on SSB, 30,000 on CW. It this total 15,000 had been contacted on four bands. Martin's QSLs come by the kilo. Martin commented on the large numbers of direct cards received. Australia is still a rare country for many amateurs in the Northern Hemisphere.

The dedication has paid off and Martin is the holder of many world wide contesting awards. These include more than ten trophies for Continental wins as well as over one hundred winning certificates at the country level in significant contests. The most recent award was the Winners Cup for the Single Operator All Band Phone Section of the Oceania DX Contest in 2000. His score was 3.73 M points.

Although the main transceivers are now commercial Martin still builds much of his station including antennas. A Radio Amateur for over 35 years Martin is still clearly having fun and constantly learning new things.

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Contest plaques and the Oceania DX
Contest Winners Cup

Simple Q meter

The Simple Q Meter AR January 2002 p12 had two errors in the diagrams.Fig. 1 Switch contacts S1 labels 'a' and 'b' should be reversed.
Fig. 2 The resistor should be labeled 4.5 + Rc
The attached diagrams are correct.
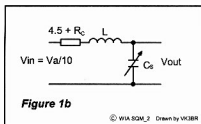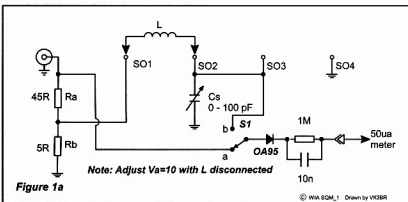
Figure 1a

Note: Adjust Va=10 with L disconnected

© WIA SQM_1 Drawn by VK3BR

Figure 1b

© WIA SQM_2 Drawn by VK3BR

Technical Abstracts

Gil Sones VK3AUI
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Six Metre Squalo

A Squalo is a square halo antenna. A Halo is a dipole folded into a circle and a Squalo is a dipole folded into a square. Both the halo and the squalo offer an approximately omnidirectional pattern in the horizontal plane. They can be made smaller by end capacitive loading and this is often done for use as a mobile horizontally polarised omnidirectional antenna. A design for six metres appeared in QST January 2002 built by Dick Stroud W9SR. This design was unusual in that the Squalo was constructed from the frame of a discarded folding lawn chair.

The squalo was built from the legs of the folding chair which had been discarded due to the seat and backrest becoming unreliable as the webbing deteriorated. The thin wall aluminium tubing had an outside diameter of 0.975 inches and the right angle bends had been made by the chair manufacturer. The antenna construction is shown in Fig 1.

The two halves of the Squalo were joined by a 12 inch length of 1 inch tubing which telescoped over the two ends. This was fastened together with screws. A teflon insulator made from teflon rod was used to join the opposite
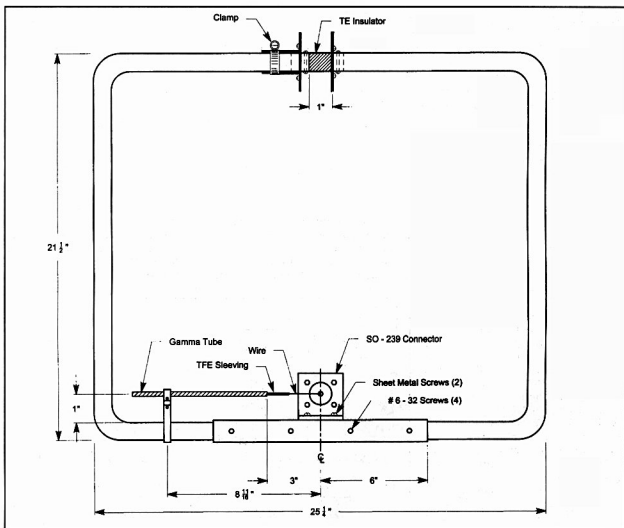
Fig 1. Squalo Antenna.

side. The two capacitor discs were 3.75 inches in diameter and had a centre hole to just clear the tubing. Small L brackets hold the discs to the tubing. One disc is fixed and the other is adjusted and clamped in position by a hose clamp which holds the L bracket in place on the tubing.

The Gamma match is made from a 7.25 inch length of 0.225 inch OD aluminium tubing. The centre element is a 9.375 inch length of 0.125 inch diameter copper wire. The centre element is insulated from the outer tube by some teflon sleeving. The adjustable clamp for the Gamma arm is made from thin aluminium sheet and is made in the form of a double clamp.

A mounting plate of 0.125 inch thick aluminium is used which was 6 inches long and 2.75 inches wide. This was fastened to the mast and the Squalo in the middle of the element adjacent to the feed point.

The antenna is first resonated by adjusting the capacitor spacing. Then the SWR is minimised by adjusting the Gamma match. There may be some interaction and after several adjustments a low SWR should be obtained. The author obtained a 2:1 SWR bandwidth of 333 kHz.

Active Antenna

An active antenna comprises an antenna element and an amplifier combined into the one device. The antenna element can be a dipole, loop, or a monopole and is usually non resonant and small. The amplifier is combined with the antenna element hence the term active antenna. A design to cover 160 metres to 4/6 metres appeared in Rad Com October 2001 designed by Ian Braithwaite G4COL. It uses a 1 metre or thereabouts length of wire for the element and the amplifier uses standard components which should be easy to obtain.

A longer antenna length may seem attractive but it may result in signals which overload the amplifier causing severe intermodulation. The amplifier has a modest gain and must handle all signals present from below the broadcast band to VHF. The small antenna picks up a smaller signal and so helps to limit intermodulation. The amplifier amplifies the signal and allows the use of a coaxial cable to the receiver. The small antenna and amplifier can be less visually obtrusive and can even be hidden inside a non metallic roof.

The amplifier is shown in Fig 2. The FET used is a J310 type which is readily available. The output transformer is wound on a small toroid. This could be an Amidon FT37-61, or FT50-61 or alternatively a Philips type using 3C85 material no 433003037790 which is available from Farnell stock code 175-504. While the Farnell code is for the UK they do have an outlet in Australia.

The toroid T1 is wound with a quadrifilar winding of 0.2 mm diameter enamelled copper wire. Four strands of 0.2 mm enamelled copper wire approximately 300 mm long are placed side by side and twisted together. A few twists per centimetre is adequate. The use of a small vice and a small hand drill will allow this to be done easily. The windings are then connected in series to produce one winding with three taps. The tap nearest the ground end is used for the output and this provides a 4:1 voltage stepdown.

The power feed unit RF Choke RFC1 is wound on another toroid of the same type and consists of around 20 turns.

The resistor R2 is selected on test to give a current through the FET of 15 mA. A suitable starting value would be 47 ohms or 68 ohms and the current should be in the range of 10 to 20 mA with a target around 15 mA.

Both the antenna amplifier unit and the power feed unit were housed in small diecast boxes. Other types of small metal boxes could be used if desired.
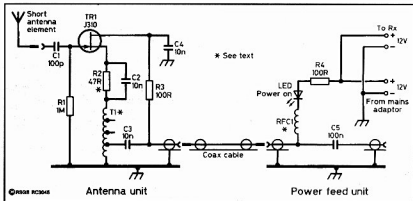
Fig 2. Active Antenna Amplifier and Power Feed Units.

Cheap and Cheerful Varicap Diodes

Jim Tregellas VK5JST
14 Sheringa Drive, Morphett Vale, SA 5162
E-mail: endsodds@internode.on.net

Recently, I have been playing around with VCXOs and VCOs, and to do this, have delved into my stock of varicap diodes, types BA102, BB105, and BB212s. These old faithfuls have been soldered into and removed from many trial circuits, and now have leads so short that some are no longer usable and require replacement.

I went to the usual places, such as the Dick Smith and Jaycar catalogues, only to discover that the only varicap still sold by these organisations is the BB212 at a one off price of around $6.00. This device is generally used for tuning AM car radios, has very large junction capacitance, and so is not too useful at HF. Hmmm....... Well, I thought, perhaps Radio Spares have high frequency varicaps around 30picofarads.

So I dug out their 1998 catalogue and looked for conventional varicaps. Sure enough, there was the Motorola MV series with the desired characteristics. The MV1638 (30pf at -4V) sells for $35.07 in unit quantities- Hmmmm again. Alternatively you can have BB619s or BB515s for around a dollar each but the catch here is the package. These diodes are supplied in a SOD 123 surface-mounting package, 1mm wide x 1.8mm long - for me these need to be fluorescent green, braille encoded and supplied with optional guide dog! Well, desperate times cause desperate measures, and remembering that all semi-conductor junctions have capacitance, I started looking at some of the other semiconductor devices in my junk box.

A quartz crystal oscillator was built at 10MHz, which featured low crystal drive levels and consequently very small AC voltages across any crystal series capacitance. A frequency versus capacitance law was then established for this oscillator by plugging in various values of crystal series capacitance. A number of diodes were then substituted for the crystal series capacitance to establish how large or small their junction capacitance was. The graphs below show the winners. 1N4004s, 1N914s, and various zeners around 20-30 volts were tried, with little success. In general the junction capacitance is either too low to be useful at HF, or reverse leakage current eliminates the device. However, 1 watt high voltage zeners (70 volts and beyond) as well as high power diodes (2 and 3 amp) seem to produce good circuit Qs at 10MHz combined with negligible leakage currents. And best of all, these devices won't disappear because they have to have this physical size in order to dissipate the quite large powers for which they have been designed. Couple this with a price of around 50 cents, and you've got a highly desirable varicap. Of course, they don't come with a 5% tolerance, but this will not deter any experimenter worthy of the name, as these devices are so cheap and readily available. One other advantage- an optional guide dog is not required.

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Junction Capacitance - PicoFarads vs Semiconductor Junction Reverse Bias Voltage

— 1N5404 (3 amp, 400 V power diode)
- - - 1N4761A (75 V, 1 W Zener)

© VK5JST_1 Drawn by VK5BR

From **Z** to **A** – and back
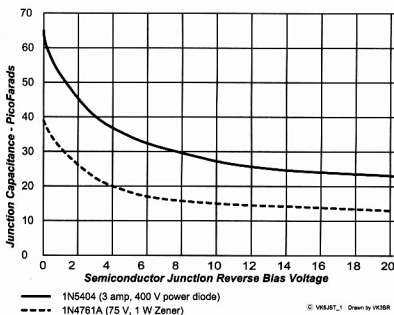
Zeehan   Astronaut

Zeehan Primary School International Space Station Contact 20/3/2002

By Dick Van Beek VK7KVB

The International Space Station (ISS) has been of great interest to most people on planet Earth and in particular to the family of an eight-year-old boy, Thomas Lynd, in a little mining town on the West Coast of Tasmania. Thomas' Dad just happened to be an amateur, Bill VK7KHZ (his real name is Shane!) Thomas and Bill had spoken to Andy Thomas aboard MIR and listened to many passes when Andy spoke to other amateurs in Australia, so when hearing contacts from the new ISS the inevitable question arose, "When are we going to speak to the ISS, Dad?"

The Zeehan Primary School Principal Neville Barnard was asked if the school would be interested in making a contact with the ISS. "Yes", was the immediate answer. An application was made to ARISS (Amateur Radio International Space Station), approved and a date and time set. This would be a history making first for Australian Amateur Radio and the ARISS.

At about this time VK5ZAI Tony Hutchinson the Australian appointed coordinator of ARISS became more involved and as our appointed mentor was of an enormous help with his advice and continuous email updates.

Grade 5/6 was the lucky class, under the guidance of teacher Miss Kathryn Weidenhofer. This class was nearly at the end of an educational project covering Communications and Space science so the potential ISS contact would fit in really well with the school curriculum. As the contact date approached the students worked out questions they would ask, practised correct radio procedure with the aid of an obsolete microphone Bill had given them, and listened to audio files of other schools who had already made contact

Dick VK7KVB and Bill VK7KHZ operate the station for the students

Students queue up to aks questions of astronaut Carl Walz KC5TIE

with ISS. This "training" proved to be very worthwhile on the actual contact day.

One of the conditions of the ARISS contact was that we had 2 complete working stations so the following equipment was selected.

1 x 4 x 4 element crossed Yagi antenna at fixed azimuth on a tripod stand with a medium duty rotator, elevation was controlled manually.

1 x Quadrifilar Helix circular polarisation standby antenna.

Thomas Lynd closes the Station

1 x Alinco DR119t VHF radio with output set at 5 watts.

1 x Icom 251A multi mode standby radio. (The Alinco proved to receive better at FM than the Icom.)

1 x Tokyo High Power HL180v amplifier.

2 x Dick Smith 20 amp power supplies wired in parallel.

1 x 210 AH lead acid battery connected to the power supplies.

1 x PC (main use, record the contact.)

1 x Speaker phone

The big day arrived. By the time I got to the Zeehan Primary School Bill was already at work. We had planned to hold the event outside in the courtyard so people could watch the ISS as it passed overhead while the students spoke to astronaut Carl Walz KC5TIE. But the weather turned sour with high winds and heavy rain so the equipment was set up in the assembly hall. The wind had blown over and damaged the crossed Yagi antenna, so Bill and I completed its installation by anchoring the tripod antenna stand to the flat roof with G clamps. The Quadrifilar Helix antenna was mounted to the side of the building and all antennas and feeders were checked. SWR on all antennas was below 1.2:1 despite the damp. Next the antennas were tested with the Tokyo High Power amplifier in line for a few minutes with no problems. Power out of the amplifier was 120 watts. Current

No ARISS contact had been made with any Australian school to date so this would be a history making first for Australian Amateur Radio and the International Space Station.

drawn was 30 amps when the Alinco was keyed up and amplifier on. The current was shared between two identical power supplies. The power supplies we used were variable voltage types so it was easy to set the voltage on one and then adjust the other until the amp meter read about the same, in this case about 15 amps per supply. If the mains failed we would fall back on the 210 amp hour battery. We had the radio equipment and antennas ready.

We wanted to record the contact and this was done using a P266 PC that had multimedia capabilities. An electret microphone plugged into the sound card was connected to the Alinco radio we would use for the contact. Bill's son Benjamin was given the job of holding the microphone a set length from each person. This set up made it easy to record both sides of the conservation.

A phone was also required to be near the station so Tony VK5ZAI could assist if necessary, also we considered it beneficial to have access the Internet in the lead up to the contact, to keep an eye on the Web page that displayed the ISS tracking software. The phone worked OK but no matter what we did we could not get the modem to work. We learned later that the school used a 4wire commander telephone system. We really wanted to get the computer next to the radio gear on the Internet but this was not to be. The school had a computer set up not
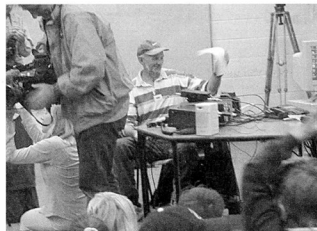
Success!

far away that we could use and many visitors found the website of interest. We needed confirmation (for our own peace of mind) of the pass details as we had to adjust the elevation on the main 4 x 4 crossed Yagi antenna manually. A simulated practice "live" run through with me listening to the kids ask their questions from my car was done to confirm they all spoke loud and clear enough.

With at least 130 people in attendance including members of the media nestled around the radio gear, we were ready for the contact scheduled to commence at 8:27UTC (7:27 local). About 5 minutes prior to the scheduled contact, Tony VK5ZAI addressed the crowd of eager onlookers and listeners via the speaker phone and explain the ARISS educational program and express our

sincere appreciation to ARISS, AMSAT, NASA and WORLDCOM for their support.

With less than two minutes to go before our scheduled contact, total silence fell on the room. Two very anxious amateurs, Bill sitting with microphone in hand and myself poised with fingers on the computer could not believe how long the last 2 minutes seemed to be.

At exactly 7:26: 32 The call went out, "NA1SS, NA1SS this is VK7KHZ Zeehan Primary School, Zeehan Tasmania do you receive OVER…"

Nothing heard, with total silence through the radio loudspeaker. Tony VK5ZAI responds around 10 seconds later through the speaker phone "Call him again I think he heard you"

"NA1SS NA1SS this is VK7KHZ…" etc.

"VK7KHZ this is NA1SS I hear you loud and clear OVER"

"NA1SS this is VK7KHZ we also hear you loud and clear, may we start our questions OVER"

"VK7KHZ you can start the questions OVER"

Following is the list of questions from the Zeehan Primary School;

1. This is Natasha Board – *How long do you stay on the ISS before returning home* OVER

2. This is Dylan Bramich – *How often do you get to talk to your family* OVER

3. This is Jamie Keogh – *What is the hardest thing about working in zero gravity* OVER

4. This is Daniel Mackrell – *What is it like to walk in space* OVER

5. This is Emma McKenzie – *What do you do in your spare time, are you able to watch TV or listen to radio* OVER

6. This is Tristan Nankervis – *What type of food do you eat in space and how is it prepared* OVER

7. This is Michael Turner – *What happens to your rubbish, is it bought back to Earth for disposal* OVER

8. This is Tahana Beamsley – *What, for you is the most anxious part of space travel, Lift-off or re-entering the earth's atmosphere* OVER

9. This is Natalie Maine – *How do you prepare your body for your return to Earth* OVER

10. This is Thomas Brooke – *What happens if something goes wrong and you have to evacuate the ISS* OVER

11. This is Melissa Campbell – *What types of Space experiments are you involved in on the ISS* OVER

12. This is Naomi Duggan – *How do you sleep in zero gravity* OVER

13. This is Ashleigh Docherty – *Why do you have to wear the Space suit only when you are outside the Space Station and at lift-off & re-entry* OVER

Station Close

"NA1SS this is Thomas Lynd... On behalf of the students of Zeehan Primary School and Grade 5/6 teacher Miss Weidenhofer I wish to say thank you for this exciting opportunity to speak with you, we wish you well and we will be watching with interest your return to Earth. This is VK7KHZ - OUT "

We were fortunate there was time to ask all 13 questions, receive answers and for Thomas to close the station. Total unedited wave file showed that the contact had been 10 minutes and 26 seconds. The grade 5/6 Zeehan Primary School students and everyone else in the hall had been given the opportunity few people in the world have, of being involved in a live contact with Carl Walz on board the ISS. The contact was hailed as an outstanding success as the room was filled with applause from the excited crowd!

For those interested pictures and a copy of the audio file can be found at: - http://www.vk7ax.tassie.net.au/spectrum/ZeeISS.htm.
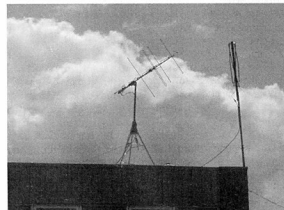
Zeehan ISS Antenna

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Shortening Screws

A screw of the length required is often unavailable which leads to the use of a longer screw which needs to be shortened. This is an increasingly common problem as most hardware is packaged in what are regarded as a few common sizes. Shortening a screw can produce a result which is less than ideal when you need to use the shortened screw. In the In Practice column of Ian White G3SEK in Rad Com December 2001 a method of shortening a screw using only basic tools was given.

The method requires the use of two steel nuts. The nuts are run onto the screw with the outer nut being adjusted to the required length. The inner nut is used to lock the outer nut in position. The screw with the two nuts is now held in a vice with fibre jaws. Dont use the steel jaws as they will damage the screw head as they grip. This is shown in Fig 3a.

The unwanted length can then be removed using a small hacksaw. The face of the outer nut provides a cutting guide. Then file the end of the screw and nut flat with a small file. The outer nut can now be removed. The nut will be a little stiff but will be removed without too much trouble. It will have raised a lip on the end of the thread in the process. See Fig 3b. Use a needle file to remove the lip which is sharp and a hazard. Clean up the start of the thread with the needle file. Now remove the second nut and if stiff screw it back on and clean up the thread some more until the nut can be removed with ease.

Fig 3. (a) Gripping Screw for Shortening. (b) Restoring Cut Thread with Needle File.

Clandestine communication equipment:
my part in its creation

by Stephen G. Hart VK5HA

The recent series of articles on WW2 Clandestine Communications by Malcolm Haskard [1] brought back memories of how I was involved in the product engineering and manufacture of clandestine equipment. It all started in 1924, when aged 8 I was given a crystal set and became "hooked" on radio. In later years I became an electronics engineer and over an 18 year period, starting 1938 I worked on several clandestine projects in the United Kingdom before coming to Australia in 1956.

My first challenge, type BEF2

My first job in radio was a troubleshooter in the production test department of Cossor Radio in North London. After a few months I moved to Philco Radio at Perivale, progressing over time from the Production Floor to the Development Laboratory. In late 1938 I produced the prototype of a small battery operated LW-MW portable receiver, which later was the BEF2, which was issued to troops and others as a means of disseminating news. The set was in a wooden cabinet with a striped Rexine material cover, and about 30 cm long, 15 x 15cm looking endwise. The compact size was made possible through employing the recently available miniature 1.4 v battery type valves. While working at Philco in 1939 I became aware of the Signals Development Organisation (SDO) headed by Colonel Schoeter and Captain Holiday, both known to me for they had been on the General Engineering staff at Philco. This organisation was the forerunner of the Inter Services Research Board (ISRB) R&D Establishment at Old Welwyn in Herfordshire. ISRB headquarters were in Baker Street; I assume it was a division of the Special Operations Executive (SOE).

The Eureka Mk III

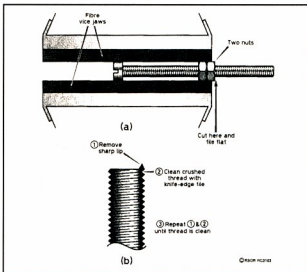Having registered with the Government Appointments Board I was offered a job at the Ministry of Supply Air Defence Experimental Establishment (ADEE) at Somerford, then in May 1940 in the Radar Receiving Development Laboratory, and transferred to the Department providing Establishment and Manufacture liaison in 1941. The Superintendent of ADEE was an Australian, Dr. D H Black, and in 1942

he delegated me to the Air Ministry Telecommunications Research Establishment (TRE) Eureka Mk III project to liaise between TRE and the Cosser Company in North London. The Eureka was a very small radio transceiver beacon similar to the S-phone. I remember a visit to an army base in Salisbury Plains where a Major strapped on the belt carrying the Eureka and several bulky batteries and threw himself onto the floor many times several times in different postures to establish whether or not bodily injury occurred.

The Miniature receiver, type MCR 1

In 1943, as the outcome of an earlier social visit to Philco, I rejoined the company to work on a special project, the MCR1. I met Captain, later Major John Brown the designer of the MCR 1, who showed me his prototype and filled me in with the design details. My job was production development, prototyping extending through the early stages of production and testing with a continuing technical responsibility throughout the period of MCR 1 production. Figure 1 shows the MCR 1 circuit diagram. The AC/DC power unit was the responsibility of another engineer and the final packaging in the Huntley & Palmer biscuit tin was probably undertaken by ISRB themselves.

The drawing office, model shop, tool room and press shop all helped in the making of the metalwork and mouldings. It was my task to construct six prototypes and subject them to all the necessary measurements and tests in order to assess and then establish the performance parameters for the approval of Major Brown, a task that included IF and RF coils. The design of the MCR 1 was unusual in as much as it used a

single span system that gave LW-MW band coverage in a single range (100 to 1600kHz). When it came for me to put Major Brown's prototype through performance tests instability was observed on this band. The problem was passed back to the Major. A resonant IF trap in the aerial circuit was the cure.

For the first few weeks of production I spent time each day on the assembly line, taking the place in turn of each operator whose specific task I knew very well. I recall the total production as 50,000 or more than a 1,000 units per week, taking over a year to complete the task. The coil winding shop, although by no means small, was unable to cope with the very large number of coils needed per week, so Philips and Advance Co. were brought in as subcontractors. The miniature variable antenna trimmer capacitor was made by GD Radio at Hendon. Philco Test Department designed and built several signal generators that provided rapid frequency selection enabling minimum test time, needed for the high rate of daily production.

The Airborne S-phone unit

Following upon the MCR 1, ISRB gave Philco the contract to produce the S-phone Airborne VFO Unit. The preproduction task was given to me. Liaison was with Lieutenant Hoyle who demonstrated and explained the system to me at Old Welwyn headquarters. The S-Phone was a duplex transceiver, two way communication taking place with sound proofed headset and microphone so only the operator could know what was said and received. Ground equipment in use is shown in Figure 2. The VFO was around 20cm long and 8 x 8cm looking endwise. It used an RL 18 triode, a short lecher line tuned with
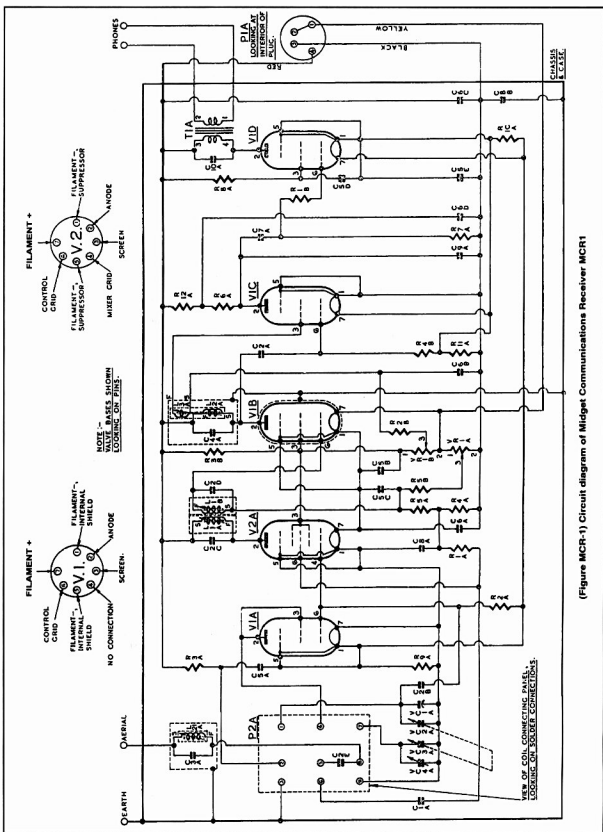
(Figure MCR-1) Circuit diagram of Midget Communications Receiver MCR1

Figure 1. Circuit and components for the Midget Communication Receiver, Type MCR1

a variable capacitor of unusual design, rotation of one semi-circular surface perpendicular to the other. The test set up employed a ground plane antenna using a copper sheet about 60cm square upon which were mounted three quarter wave elements. The transmitter and antenna were activated by a complex looking unit I knew no more about than how to operate. It facilitated modulation and the switching of the two reflector elements which provided Left-Ahead-Right sensing to guide the approaching supplies support plane to the location of the Resistance Personnel in hiding. Accuracy I believe was around half a degree.

Other clandestine equipment

Over the period 1948 to 1956 I was with the production unit of an organisation whose task it was to design and provide communications equipment for the needs of intelligence gathering. As Works Engineer (Electronics) I was associated with the prototyping of a modernised version of the S-phone system, the setting up of the production test facility and then overseeing production testing which was carried out between a site in Buckinghamshire and a Dunstable Downs hilltop.

Following that, I was asked to give thought to the design and development of an MCR 1 follow-

on, if possible the size of a 50 Players tin. Variable inductance tuning was considered, but discarded when I came up with the concept of a two section side-by-side variable capacitor embodying drive and spiral scale. This concept resulted in the overall dimensions of the receiver, inclusive of the coil box to be less than 16cm long, 8cm wide and 4cm in depth. The main body was minus a rectangular section less than 9cm long and 4 x 4cm looking endwise, this space accommodated the plug-in coil box. Only one being needed to cover all bands. Two coil box sides comprised of longitudinal bakelite panels housing the connecting sockets. Inside the box there were two rows of miniature potcore inductors, one row for the antenna, the other for the oscillator circuit. Band selection was by changing the coil box orientation of which there were four options. The reduction drive of 22:1 and the frequency calibration were a composite part of the mechanics linking the two side-by-side capacitor sections together. The circuit was that of a basic superhet with BFO and a nominal IF of 460kHz. The valves were of the ultra miniature type, pencil thin with flying leads. The side-by-side capacitor was prototyped and manufactured by Wingrove & Rogers the "Polar" company in Liverpool, founded by Colonel Rogers (with whom I liased) and Major Wingrove. There was a companion battery pack and several hundred sets were made. It was known as the Receiver type 301. This was my final participation in what at that time, in view of the cold war, was a most necessary field.

Conclusion

I trust these memories will encourage others to share their experiences of clandestine communication equipment, including design, manufacture and operation so that the secrets of past years can be shared with equipment restored and treasured.

References

Haskard M. R, (2001), "World War II Clandestine Communications", in three parts, Amateur Radio, Volume 69, Nos. 1, 2 and 3.

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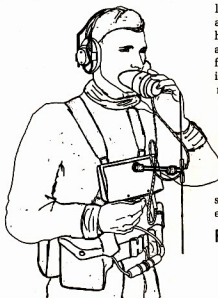
Figure 2. The S-Phone in operation, bringing in a Lysander aircraft.

Gosford Field Day

As usual Dot VK2DB manned (or should that be womanned?) the ALARA stand for the Gosford Field Day and had a number of YL visitors. June VK4SJ came down from the Sunshine Coast, Val VK4VR and Anne VK4ANN came down from Maleny, Agnes VK2GWI and Karen VK2YKB visited and Linden VK1LSO decided to join ALARA on the day. Welcome and Hello to everyone.

Dot was luckier than most, she purchased a searchable CD of the WIA Callbook, which seems to have been in short supply since that Field Day. No doubt it will reappear in due course.

The 222 Net

This net is very efficiently run by June VK2SJ and is used by a number of overseas YL stations on a regular basis. We should make the most of the opportunity while the propagation is so good. The sunspot cycle will not last forever.

The Net is run each Monday on 14.222 MHz. It is suggested you call in from 530UTC that way, as other calls come in they can be told you are there so you can make contact. There are lots of Awards to be gained this way.

Why not see how many DX YLs you can contact. There are lots of Awards to be gained this way.

I also hope a number of people entered the Thelma Souper Contest at the beginning of April. With the change in the rules to allow VK stations to be multipliers and with OMs allowed to contact both YL and OM stations there should be much more opportunity to make good scores.

The details of the rules were all in the ALARA Newsletter for January.

The 33 Award

There is a new YL award, just launched on 14th April. In honour of Ethel K4LMB, a certificate will be awarded to any licensed radio operator who works 33 different YLs on any authorised frequency, including UHF, VHF, or HF. Net or repeater contacts cannot be counted

The award will only be available during 2002.

Logs should be sent to YLRL Vice President Jeanie Parker WA6UVF, QTHR postmarked no later than 31st December 2002.

Above: Agnes VK2GWI and Nancy at the ALARA table.
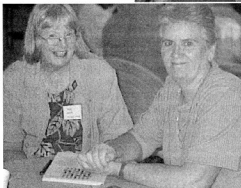
Right: Anne VK4ANN and Val VK4VR taking a crossword break.

ALARAMEET 2002

October 5 and October 6, 2002.
Murray Bridge SA

The date is getting closer. Many people have booked their accommodation but we are not sure if all of those have told Jean VK5TSX, the coordinator, that they have done so.

All the details of costing will be in the April Newsletter and posted on the website. The deposits will need to be on their way soon, too, so the information in the Newsletter should help you organise all that.

We hope a number of OMs will come along and bring their YLs. It is not necessary to be a member of ALARA to participate. It is a great weekend of good fellowship for YLs and OMs. It is normal for the local amateurs to join in, wherever the ALARAMEET is held. We hope this year will be no exception.

Another story of our Mary

Mary VK5AMD is known to many of the travellers between Adelaide and Melbourne. She monitors 2 metres continuously and enjoys all the conversations with passing amateurs. She also makes a mean cuppa, so stop and visit if you have time.

However, her latest activity has revived an interest she has had since she was a child. She has taken up painting again, and, with a little encouragement from the Tolmer Pallette Painters she has put some of her paintings on show.

She has been drawing since she was a child; she has painted in oils and is now trying her hand at water-colours.

One of her paintings will be part of the Special Effort at the ALARAMEET later this year. Perhaps she will bring several others along to show us.

If you would like to see Marys paintings and those of other local artists the Tolmer Pallette Group has opened a gallery in Bordertown which is attracting a number of passing visitors as well as the townspeople.

A YL with many talents is Mary.

Beyond Our Shores

David A. Pilley VK2AYD
davpil@midcoast.com.au

Logbook of the World will complement QSL tradition

ARRL's *Logbook of the World* (LOTW) electronic contact-verification program will spark "a culture change" when it's introduced later this year, predicts Project Manager Wayne Mills, N7NG.

Once LOTW is operational, participants will be able to qualify for awards such as DXCC or WAS without having to first secure verification in the form of hard-copy QSL cards. But Mills—who heads ARRL's Membership Services Department—is quick to add that LOTW will complement the conventional exchange of QSL cards, not replace it.

"We will not do away with accepting QSL cards in the traditional manner," Mills says. "We're not replacing the whole paper QSL scheme with Logbook of the World." Neither will Logbook of the World provide a means to get QSLs—electronic or otherwise. Mills said amateurs will still be able to solicit QSLs—even electronic cards—although e-QSLs still may not be used to apply for ARRL awards. Mills this week issued a separate ARRL e-QSL policy statement to clarify what is and what is not acceptable <http://www.arrl.org/news/stories/2002/03/07/100/>.

Logbook of the World "is really a system to offer credits for awards—and not just our awards," Mills explained. He hopes to enlist the participation of other organizations that grant operating awards, such as CQ and RSGB.

Central to the LOTW concept is a huge repository of constantly updated log data provided by individual DXers, contesters and DXpeditions and maintained by ARRL. Once it's up and running, Logbook of the World will be able to provide quick contact credit. Mills adds that the system will be open to all—ARRL members and nonmembers.

Registering and uploading electronic log data to LOTW will be free. The only time users will incur charges is when they wish to apply contact credits toward a particular award, such as DXCC, WAS or VUCC.

Software development for *The Logbook of the World* continues. "We're well into the software implementation phase for the logbook server," said ARRL Web/Software Development Department Manager Jon Bloom, KE3Z, who expects to begin full system testing this spring.

"The security part is the linchpin of the system," Bloom said. Both he and Mills emphasize that every effort will be made to ensure the integrity of LOTW log data. Registrants will have to positively identify themselves via off-line, hard-copy means before being issued a secure—and free—digital signature and granted password access.

In simple terms, when a participant logs on, the Logbook system would determine if its database contains any contact "matches" with log data submitted. If so, a user could apply any credits generated to particular awards at a per-credit fee. Mills said the cost would be in line with current ARRL award fees.

In situations where an operator disputes a failure to match, Mills said, the operators involved would have to resolve the situation off-line.

Bloom and Mills believe that *Logbook of the World* will improve the integrity of the confirmation process. "It will remove some of the human factors that lead to errors," Bloom said. And, Mills added, Logbook will minimize opportunities to purposely "game the system" or to outright cheat—something that's not always possible to detect even with paper QSL submittals.

Mills said he hopes to announce an inauguration date for *Logbook of the World* within a few months.

(ARRL N/L 10/3)

Amateur radio in space

Over the past year I have reported quite a few of the contacts the International Space Station had conducted with schools around the globe. The March 14 contact – sponsored by the Amateur Radio on the International Space Station (ARISS) programme – was the 50th in a series of scheduled school QSOs since the first ISS crew came aboard in November 2000.

The lucky school for this contact was with the Peter Anich Oberschule für Geometer in Bolzano, Italy. It was conducted in English. During the 10-minute contact, 10 students put 18 questions to Dan Bursch, KD5PNU, on a wide variety of topics. Students asked about electrical power consumption and oxygen production aboard the ISS as well as about ultraviolet and cosmic ray exposure.

During the contact, Bursch and his ISS crewmates, Yury Onufrienko, RK3DUO, and Carl Walz, KC5TIE, were passing over Australia, where Tony Hutchison, VK5ZAI, served as the ground station. Two-way audio was distributed via a WorldCom teleconferencing circuit.

Teacher Peter Kofler, IN3JHZ, prepared the students for the ARISS contact and handled telebridge audio at the school. ARISS mentor Gaston Bertels, ON4WF, in Brussels moderated the session.

Think of the distances involved here. It really shows amateur radio at its best and should make you feel proud to be part of this exclusive fraternity.

(ARRL N/L 16/3)

Maritime Mobile says "Thank you"

David Beane, G0TAG, this week expressed his thanks to members of the Maritime Mobile Service Net, who assisted him and his wife, Sarah, after their sailing vessel Tao went aground March 26 off Cuba.

Amateurs were able to contact Cuban authorities, who secured the vessel and later helped to refloat it. "Having got our brains back together after our nasty incident we wish to send our thanks to the guys on the Maritime Mobile Net who acted with such efficiency when we went aground on the north coast of Cuba," Beane said. "The Cubans helped

to lay out our anchors and stood by us during the night." They also arranged for a tow boat, Beane said, but as it turned out, a tow was not needed as the couple managed to get their sailboat into deeper water by themselves. Cuban fishermen then escorted the Tao into the ocean through a gap in the reef, and in port at Moa, two divers checked out the

underside for damage—all at no cost, "just a lot of smiling and waving." Beane said.

If you have any interesting amateur radio news from overseas, please share it with us.

Email davpil@midcoast.com.au or snail mail me de VK2AYD.

Morse programme

Did You Know?

...that a new Morse Teacher program is available? Developed by NZART's Morseman, it can be downloaded from the NZART web site or purchased on floppy disk from NZART Headquarters.

It runs in Windows, will take you from absolute zero to high Morse speeds, and is probably the best and most friendly Morse teaching program ever.

See: http://www.nzart.org.nz/nzart/

(NZART N/L 16/3)

Farewell

Many of you who pioneered SSB back in the '50s will remember B & W – Barker & Williamson, either from the early SSB transmitter 5100 or from the famous 2Q4 phase shift network that plugged into an octal base.

I used the 2Q4 in my first attempt at building a "Donald Duck" SSB transmitter, as it was known then. "It will never catch on" was the cry. I never really was successful in completely suppressing the unwanted sideband. You may be interested to learn that Jack Williamson, W3GC, passed away a few months back. He was a great inventor.

Soapbox!

I'm climbing onto a shaky soapbox for this month's column and expressing some thoughts, thoughts that are mine and not necessarily anybody else's or the WIA.

Connecting radio systems, and in particular repeaters to or via the Internet is a hotly debated topic at the moment. The WIA and others are struggling to interface this new frontier, the Internet, to amateur radio. Now the intention of this article is not to even attempt to sort out the problems real and or imagined but to look at the broader issue facing amateur radio and that is regulations. Readers of this column over the years will have detected a general dislike by me of regulations. We do need regulations, but my issue is the detailed complexity and difficulty in finding the right balance for a hobby that has at its heart experimentation.

For starters, regulations relating to amateur radio are too complex and detailed. To explain over all what I mean about over regulations, without getting into vast amounts of detail, a simple philosophical point. Amateur regulations are put together on the assumption that something unwanted might happen. Rather than assume the worst, as is the current situation, why not take the opposite position and only regulate if something undesirable starts to happen.

For example the Internet connection problem to repeaters at the moment. Clever amateurs and non amateurs design software and hardware to allow amateurs to talk through their local repeater, via the Internet, to other amateurs on the other side of the World. There are several different types of software and some allow only radio to radio contact and others for the connecting medium, the Internet, to also talk from a computer out to an amateur repeater. It is this possibility of non-amateurs gaining access to amateur repeaters that is causing all the problems.

Lets ask the question, so what? What if a non-amateur pops up from an Internet connection on your local repeater? Now I know this is as close to treason as you can get in the eyes of many amateurs, but hear me out. As I said, amateur regulations assume the worst, and in this situation it is assumed that vast numbers of Internet idiots could and most probably would end up yelling profanities at you from your local repeater. The repeater could become clogged with the worst kind of misfits from all over the World in their thousands.

However as I have aged I have come to question what appears to be the logical outcome more and more. If we always assume the worst we amateurs could continue to isolate ourselves. Amateur radio is by its nature a solitary hobby within the hobby and is facing difficulties maintaining numbers. So lets

For starters, regulations relating to amateur radio are too complex and detailed...

speculate on a different outcome of allowing non-amateurs onto some repeaters via the Internet.

Only some repeaters would be connected to the Internet and allow non-amateurs to talk from their computers out onto a radio repeater. Remember we as amateurs decide if we want to connect a repeater to the Internet and if we want non-amateurs to have access from the Internet.

Perhaps our worst fears would not happen. Perhaps there would be a number of non amateurs popping up on some of our so designated repeaters who are interesting to talk to and perhaps also could become interested in amateur radio.

Now I hear what some of you are saying. There are no end of local, National and International regulations that stand in the way of this happening. Third party agreements, non-commercial rules, the list is a long one. However non-amateurs talking to amateurs could see the hobby of amateur radio explained to the Internet visitor, along with its content limitations. An opportunity to present amateur radio to the World could be just out there on the other side of a vast pile of regulations. If it proves to be an unworkable mess we control the off button.

Amateur radio needs a means of trying ideas like this. Written into the regulations there needs to be an experimental clause saying, "this looks like a bad idea but just incase we, the regulators, don't know all the answers, will allow a trial to be sure." It was thought that the telephone would only be useful for letting people know they had a telegram to pick up at the post office. How wrong could you be?

That's my controversial topic for the month, allowing non-amateurs via the Internet onto some of our repeaters. Yes lots of problems perhaps, but the point of this article is to say our hobby is technologically based which rapid change and we struggle with that change and declining numbers, usually by a vast number of regulations. Regulating bodies are there to regulate by creating rules, it is not their nature to deregulate or be innovative unless they are convinced it could just work. And most important to the regulator, make their job easier.

I would enjoy criticism on this topic as it could just be I'm way off the beam and need to go back to fixing a blocked sewerage pipe, which is what I was doing when I took a coffee break to write this article.

ar

Take Five — Help us to help you

As promised in the last month's AR I take pleasure in including a brief set of survey questions about the WIA and its house journal *Amateur Radio* (AR).
I would be grateful if you could take the time to respond to this survey so that the WIA can better understand how to deliver a quality service to its members, as well as all Australian amateur radio operators.

Completed forms should be returned to me directly.
A copy of this survey can also be found on the WIA web page at www.wia.org.au
All survey responses will be entered into a draw. The first three survey forms drawn will receive a free one year subscription to AR.
Many thanks in advance for your responses

73s from Ernest Hocking VK1LK

1. Are you a current member of the WIA

    YES ☐ NO ☐

2. Have you been a member of the WIA in the past (If yes, would you please indicate why you have stopped your membership)

    YES ☐ NO ☐

    Comment:
    _____
    _____
    _____
    _____

3. Do you subscribe to AR

    YES ☐ NO ☐

4. Have you subscribed to AR in the past (would you please indicate why you have stopped you subscription)

    YES ☐ NO ☐

    Comment:
    _____
    _____
    _____

5. Would you be interested in a subscription to AR in its current format.

    YES ☐ NO ☐

6. Would you please indicate what factors would stop you from subscribing to AR:

    Print quality ☐   Technical content ☐

    Cost ☐   Other ☐

    Comment:
    _____
    _____
    _____
    _____

7. Do you believe that the WIA keeps you up to date in amateur radio matters

    YES ☐ NO ☐

    Comment:
    _____
    _____
    _____

8. Do you believe that you are able to have your opinions and views heard by the WIA

    YES ☐ NO ☐

    Comment:
    _____

Separate survey form along this line

Please return this survey to:
Ernest Hocking
WIA Federal President
PO Box 691
Dickson
ACT 2602

Continues on next page

9. Indicate how you think the WIA can improve its communications with Australian amateurs.

Comment: _____

_____

_____

_____

_____

10. Would a electronic subscription to AR be of interest to you? (email or via the World Wide Web)

YES ☐ NO ☐

Comment: _____

_____

_____

11. Are you a currently licenced amateur radio operator?

YES ☐ NO ☐

12. Are you an amateur radio operator who currently does not hold a licence?

YES ☐ NO ☐

13. Are you interested in becoming an amateur radio operator?

YES ☐ NO ☐

14. Is there any specific reason why you do not currently hold a licence?

15. Do you have easy access to the Internet?

YES ☐ NO ☐

16. Are you a member of a local radio club?

YES ☐ NO ☐

17. Do you currently act in any role in support of amateur radio activities?

YES ☐ NO ☐

Role held: _____

18. Would you be prepared to provide time, or other assistance to the WIA to help other amateurs in the promotion of amateur radio.

YES ☐ NO ☐

Comment: _____

19. Gender   MALE ☐ FEMALE ☐

20. Would you please indicate your age

under 20 ☐   21—30 ☐

31—40 ☐   41—50 ☐

51—60 ☐   61—70 ☐

Over 70 ☐

If you are a member,
and wish to tell us more about how we can help you feel free to enclose a note.

If you are not a member,
please feel free to include a note about what you see as positive steps WIA could take to better serve amateur radio in general

_____

_____

_____

Only fill in the section opposite if you wish to be in the draw for subscriptions.

If you wish to remain anonymous leave it blank.

Name_____ VK_____

Address: _____

VK7 Notes

QRM. Tasmanian notes

The Tasmanian Division annual meetings, held late March resulted in some changes to our executive and Council. Our Council must consist of at least two from each of the three branches – This year's members are:-

SOUTHERN BRANCH
  Mike Jenner VK7FB
  John Bates VK7RT.
  Dale Barnes VH7DG.
NORTHERN BRANCH
  Phil Corby VK7ZAX
  Al Burke VK7AN
  Geoff Wells VK7ZOO
NORTH WEST BRANCH
  Ron Churcher VK7RN
  Bob Cropper VK7BY

Mike Jenner was elected as President, John Bates as Secretary/treasurer and Phil Corby continued on as our Federal Councillor. It is disappointing that our membership has fallen slightly over this year – this is happening, it seems, in all hobby. sports clubs etc and is a serious trend in people involvement. We have to keep a tight rein on our finances – thank you, John, for your good work here.

We held the meetings in the Burnie Scout hall. An I.R.L.P. demonstration attracted a lot of attention as did a brilliant interactive video presentation put on by Hydro Tasmania and presented by their senior technician, Terry Ives, VK7ZTI on the windfarm project at Woolnorth in the far northwest of Tasmania.

At the last meeting of the Southern branch Mike Grath gave a lecture on "Communicating with light" with an interesting example of the optical technique of using L.E.D.s and readily available detectors to communicate over many kilometres. His fellow experimenter, Chris Long will soon join him in Hobart to conduct more experiments and even try for long distance records. We await with interest more news of these.

The Southern ATV group has re-activated itself and has a six metre repeater and an ATV repeater as fresh projects. The Tasmanian beacons, 2 metre and six metres, are humming away merrily from their Kelcey Tiers location behind Devonport but the 70 cm. Beacon is still on the sick list. Won't be long ! Cheers for now.

Ron, VK7RN

VK7 Council. *Seated, L to R:* Incoming State President Mike Jenner, VK7FB, Honary secretary John Bates VK7RT
Standing, L to R: Dale Barnes, VK7DG, Phil Corby, VK7ZAX (Federal Councilor), Ron Churcher, VK7RN, Bob Cropper, VK7BY, Al Burke, VK7AN. Missing Geoff Wells, VK7ZOO.

Terry Ives, VK7ZTI a senior technician with Hydro Tasmania setting up his interactive video presentation of the windfarm project in far northwest Tasmania.also explaining the Basslink proposal for linking Tasmania to the Victorian grid.

VK1 Notes

Forward Bias

Quorum: a minimum number of members in an assembly required to be present before any business can be transacted. As most of you will know, at committee meetings a quorum is five members. But at general meetings, annual general meetings, and extra-ordinary meetings the quorum is 30 members. This rule is giving a few heartaches, because during the last few years membership has dwindled, and as a consequence fewer members show up at general meetings. At present, most meetings comprise between 20 and 25 members, not counting visitors. Although this number is representative of the membership, no business can be transacted without a quorum. On important issues, the Committee can only seek advice from members present at a general meeting and resolve them at the following committee meeting. Dry

stuff, but very important. At the last committee meeting it was resolved to present two special resolutions to the members at the November meeting, one of which deals with this issue by changing the quorum down from 30 to 15. The other resolution deals with notices. It will be proposed that the way in which members are advised about meetings will be done though the use of ordinary mail or via the internet, or by the use of the Divisional Website. This will save the Division hundreds of dollars when not having to advertise in the local newspapers. You will hear more about this in the months to come.

On another subject, Amateurs in the ACT and surrounding district now have access to the IRLP mode of operation. Thanks to confreres Ernest Hocking (VK1LK), Hugh Blemings (VK1YYZ),

Peter Kloppenburg VK1CPK

Alan Hawes (VK1WX), and Phil Longworth (VK1ZPL), Canberra now has an IRLP node in operation. This node, identified as 611, operates via the 70-cm Black Mountain (Telstra Tower) repeater on 438.525 MHz. The node at present is an "open" system; all you need is an UHF rig, and a means of generating DTMF tones to access it. Due to the receiver input being affected by LIPDs however, it is planned to install CTCSS sub-tones access of 123 Hz to the repeater in the near future. If you happen to be in the Canberra area, feel free to fire up and use our IRLP node, and of course, we welcome anyone who has IRLP access from their home to drop in on Node 611 and give us a call.

The next general meeting will be held at 8.00 pm on May 27, 2002 in the Scout Hall, Longerenong St, Farrer. Cheers.

VK4 Notes

By Alistair Elrick VK4MV

Qnews

Sunshine Coast

The repeater group set out to a very wet Maleny to move the SCARC 146.850 repeater into its new resting-place. As the rain came down so did the shed from the old location and was reassembled at the new site complete with antennas. The repeater cabinet was carried up a now very slippery clay hill and installed into place and turned on many thanks to those present Wayne VK4SWC, Keith VK4AKA, Geoff VK4KEL, Joel and Len VK4ALF. The happy that all was working well they headed down the hill but someone forgot about how slippery that hill was and the rest of them got a huge laugh.

VK4ABW attains 6m DXCC

He is so excited! and he is not Big Kev! Gary/VK4ABW of Deeragun has attained his 6 metre DXCC. That is, he has worked 101 confirmed countries on 50MHz. Gary submitted his QSL cards and award submission to the WIA Federal Awards Officer and in no time at all has received back a very nice looking certificate and a letter of

congratulations. Some wags have suggested Gary now tries for the CW DXCC for 6metres, anyway congratulations Gary and may the contacts remain fruitful!

International Museums Weekend activated in Townsville

On the weekend 15-16 June 2002 there is a worldwide Amateur Radio activity known as International Museums Weekend where working amateur radio stations are established in Museums.

Pimlico-Mundingburra Scout Group with leader Steve VK4SGW and assistance from the Townsville Amateur Radio Club will be establishing a station at the Museum of Tropical North Queensland in Townsville. The aims of the activity are to promote Amateur Radio and Radio Scouting, promote Scouting, and attract new members, and in return provide an interesting activity and publicity for the museum.

The museum responded to Steve's initial request with great enthusiasm and support for the activity and invited Steve

to visit the museum to find out what would be available for the operation. Steve was totally surprised with an offer of a position in the most visible and public area, the Great Gallery, which contains a replica of the bow of HMS Pandora. The set-up team will also be able to erect an antenna on top of the 28 m roof. The museum has also offered to arrange press releases and multi-media coverage for this event.

Steve currently plans to set up a compact station with a laptop and HF radio and a Scouting display with no more than one Patrol or Six (6 - 8 boys and girls) present at any one time, in uniform, plus a couple of radio operators. Planned modes will be HF SSB and SSTV (MMSSTV software). No evening or night operation will occur due to the museum closing at night.

Find out more at the International Museums Weekend website at: www.ukradioamateur.org/imw/ or at Museum of Tropical North Queensland: www.mtq.qld.gov.au or at the Townsville Amateur Radio Club website www.vk4tub.org/tarc/

New Morse trainer available at TARC web site

Following the article found in 24th March edition of the QNEWS Workbench, some enterprising members of the TARCinc grabbed and tried out a copy of the Moseman's windows based program Morse Teacher. Its been 10 years since the Morseman introduced his dos-based Morse training programs to the hams in Townsville and the new program has all the great features of the old one plus more. Its very easy to install and can either teach you the letters and numbers at your own pace or engage you in receive exercises from stored pieces of text. With the Morseman's blessing Morse Teacher is now available on the TARCinc website as well as the main NZART site. To get it on the western side of the Tasman, get on the World Wide Web to: www.vk4tub.org select the TARC icon and navigate to the resources page.

73s from Alistair

VK2 Notes

by Pat Leeper VK2JPA

On Saturday 13th April, the Divisional AGM was held at Amateur Radio House in Parramatta.

There were 50 members in attendance and debate was lively at times during discussion on motions.

The election of Councillors was declared as follows: Terry Davies VK2KDK, Chris Minahan VK2EJ, Brian Kelly VK2WBK, John Turner VK2WRT, Owen Holmwood VK2AEJ, Geoff McGrorey-Clark VK2EO, and Eric Fossey VK2EFY. Eric Fossey VK2EFY later indicated that he would resign.

The Special Resolution that T. Mills VK2ZTM be made a life member was declared carried, with acclamation, after counting of those present and postal votes, with 128 votes for and 12 against : over 91 per cent in favour, more than the required 75 per cent in favour.

Voting on the other motions under consideration resulted as follows :

motion 1 - carried; motion 2 - lost; motion 3 - carried; motion 4 carried; motions 5 and 6 were withdrawn.

That's all for this month.

Photo courtesy of Eric van der Weyer VK2KUR

Awards

Malcolm K. Johnson VK6LC, Federal Awards Manager
P.O. Box 196. Cannington. WA 6987. email awards@wia.org.au

eQSLs: the way of the future?

What is the future of Electronic QSLing (eQSL) and where will we be with our Awards Program in the next few years? Hopefully the Federal Council at the next AGM will adopt a working policy and have it approved and in place for this year.

In the U.S.A. the new system will incorporate a "Master data base log book" or *Logbook of the World* (LOTW). A typical title from the ARRL, alternative award programs from various other countries will have similar QSL logbooks (LOVK) and this is also being fast tracked for this year.

In the case of major DXpeditions they will register their master log to the system and this will be available for verification, both for the QSLer and the award submission.

In future an operator will generate his/her award request on a specially formatted computer log application and email it. Updates and tallies will also be returned after fast data processing and printing.

I am sure once the dust has settled and all the systems are in place, improvements will be designed enabling software to transfer files with a common language and format.

It sounds exciting and I am sure it's all progress. For those that are not into computers the present system will continue but at a heavy cost.

My view is that while I will still pay the price for personal QSLs, electronic QSLing will save me time and money when applying for awards.

For those that just do not QSL it will give them another option with a minimum effort. This will also be a blessing for contest station operators dealing with thousands of QSLs.

As more information becomes available we will keep you up to date. It is developing fast and its implementation is not too far away.

Extract from an ARRL News Release August 2, 2001

Fast on the heels of approval of the *Logbook of the World* by the ARRL Board of Directors, software design to support the electronic contact-verification program is continuing apace. ARRL Membership Services Manager and LOTW Project Manager, Wayne Mills, N7NG, said the ARRL hopes soon to make LOTW software modules available to vendors for incorporation into their logging programs. These modules are being developed as part of the Trusted QSL open-source project headed by Darryl Wagoner, WA1GON. What is the W.I.A. doing right now?

We have updated all 8 of the old manual awards onto computer format and (non-active) typical samples are available to view on our national web site. They have been designed and formatted in Microsoft Excel and down loads will be available in 4 formats along with application sheets. These are active intelligent auto-tallying working templates to simplify the program and make it much simpler for the applicant. The new award templates can be zipped up and emailed to me for processing. The basic rules have not changed but have been updated to suit fast and changing modes. For those that prefer the manual mode these templates are also available in hard copy.

I will be covering this subject in detail in future issues.

New DXCC ARRL ruling for 1S Spratly Islands

1S Spratly Islands Callsign operations were deleted from the ARRL DXCC country listing as from the last publications October 1st, 2000 edition, it was agreed by ARRL 30.8.2000.

Section II. DXCC List Criteria

Special Areas: (c) The Spratly Islands, due to the nature of conflicting claims, and without recognising or refuting any claim, is recognised as a Special Entity. Operations from this area will be accepted with the necessary permissions issued by an occupying Entity. Operations without such permissions, such as with a self-assigned (e.g. 1S Callsign, will not be recognised for DXCC credit).

The WIA Awards Program follows the ARRL Rules, and up to the time I received the new Awards Management December 2001, we had been accepting 1S operations.

We now formally advise our WIA members that this is now invalid and will no longer be accepted

The ITU assigned 1S call sign still stands, but now will never be accepted until the Spratly Islands become a one or shared government assignment. ARRL will not accept "self nominated" operations that don't have a government approval to operate from these Islands.

The Spratlies are a political hot potato and, although technically belonging to no one, are claimed by China, Philippines, Malaysia, Vietnam, Taiwan, Indonesia and others. (Not for DXCC but for their rich oil deposits)

ARRL is only accepting operations that have official permission from one of the above countries, eg. Malaysia has been there many times as 9M0, also Taiwan BV9S.

New ARRL DXCC list

This is about to be released now and is dated February 2002. I will be supplying the new complete DXCC list for AR June 2002.

The additional VP6 Ducie Island brings the new tally to 335, but if you we may have an additional 2 new countries.

Mal. VK6LC

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New "Oscar" designator for Tiungsat-1

In keeping with PCsat and Sapphire's change of designators to NO-44 and NO-45 respectively, Tiungsat-1 has also been allocated a sequential "Oscar" number.

Henceforth it will be known as MO-46. All these satellites should by now be appearing under these designators in the keplerian element sets available from the various sources. Be sure to do the necessary alterations to your tracking software so the automatic updates will work properly.

New "Open-beta" update to InstantTrack Program
Version 1.54 of the InstantTrack satellite tracking program is now available from the AMSAT web site.

It will update previously registered versions of the program. The main feature of the latest updates is to make the entering of the attitude co-ordinates for AO-40 a lot easier. In prior versions some manipulation of the figures was required. This was due to the different orientation of AO-40's "antenna farm" to those of the previous high-orbit birds AO-10 and AO-13.

I found the update worked smoothly and it is now possible to enter the attitude co-ordinates in the form in which they are disseminated. You will need a previously registered version of InstantTrack, at least version 1.50

running in your computer for this update to work. What is an "open-beta" update? Here's how Paul Williamson explains it. "As Franklin and then I developed *InstantTrack* versions from 0.00 to 1.50, we used a traditional beta-testing scheme. That is, we asked a select group to pre-test each new release prior to the public release, in the faint hope that we would catch all the bugs before you could see them. That worked very well, and we are all indebted to the beta test teams.

However, it does take time and it's a hassle for everybody, so starting with version 1.51 I'm going to try a different,

more casual, approach. When I come up with some changes and have satisfied myself that they are probably working OK, I will go ahead and post them (on the AMSAT site). You will then have a choice. You can continue to use the released version (currently 1.50) if it meets your needs. Or, you can live on the bleeding edge by downloading the newest *open beta* version and testing it yourself. If you find a problem, you can always re-install 1.50 (you **did** make a safe backup copy of IT150.EXE, didn't you?)". So there you are, the choice is yours - go ahead, be adventurous!

PCsat Recovery Efforts
During the past month or two considerable effort has been devoted to the stabilisation of PCsat.

The satellite has been a resounding success in its mission to popularise APRS and packet radio satellite operations in general. Even though it carries state-of-the-art equipment like GPS positioning, it is nonetheless a very simple satellite. It has no CPU on board to control its operations and it has a limited set of command instructions that are based around an ordinary 'common-or-garden' packet radio TNC. Nevertheless it has done all it was designed and expected to do and more. With a limited power budget it was always prone to "negative-budget"

problems when exposed to lengthy eclipses or when all systems were activated at the same time.

PCsat's developer, Bob Bruninga WA4APR had appealed via every means at his disposal for operators to observe the advertised limitations whilst the eclipses were in progress. Despite this many stations, particularly in Europe ignored these appeals and things began to look grim for the long term future of PCsat. It was almost lost on a number of occasions. Recovery efforts are underway and some improvement is evident at the time of writing … however

PCsat may well have died by the time you read this column. It has been necessary to turn off the digipeater and lower the power output but even this has not deterred some folks from trying repeatedly to digipeat and even to repeatedly attempt to connect to the command system itself.

The situation was made worse because the major control station was in the Northern Hemisphere and the eclipse problem was much more severe there. Bob therefore recruited a number of stations in the Southern Hemisphere to help. Ian ZL1AOX, John VK2XGJ and

myself were sent copies of the command software and entrusted with the task of resetting PCsat to its lowest power situation each time it passed over this area. Unfortunately this has been an on-going job since the long periods of darkness (and some poor operating practices) caused the on-board settings to reset again and again each time the satellite went through an eclipse period, which happened every orbit of course.

In a period of some two months it has not survived a complete orbit without resetting itself. Bob has devised a strategy to, at least in part, counter the adverse situation brought about by the offending stations. At this time it seems to be working, although it is very time consuming on the part of the control stations. It is hoped that we can coax PCsat through the current eclipse period and return it to normal service in a few weeks. Please be patient. At the time of writing PCsat has been operating without need for reset for nearly two whole days although some instructions

for general power management have been sent up by the control stations just to be on the safe side. The next few weeks will be critical and the next non-eclipse period is short, so Bob may have to make the painful decision to have PCsat go out in a "blaze-of-glory" by turning it on for general operations and leaving it to its fate. In this case it would probably not survive for more than a day or two at the present rate of use (and abuse).

Good squints and great DX on AO-40

Those operators who have made the effort to equip their stations for AO-40 operation have been rewarded lately with some of the best operating conditions to date on this satellite.

Conditions reminiscent of the early days of Oscar-10 occur quite frequently. Remembering that AO-40 is still being commissioned it should be evident that even better times are yet to come. When the current attitude manipulations are completed two very important milestones are still to be rounded. The first will be the switch to 3-axis stabilisation. Implementation and testing of this operation will take some time and a lot of effort by the control stations; but if it all works we can just

about forget about squint angles.

Tests of this system have been very encouraging. The magnetically levitated momentum wheels are a first and their effectiveness will be watched by amateurs and professionals alike. Three-axis stabilisation means that AO-40 will be earth-pointing at all times and that will mean the antennas will always be in their optimum direction for best all-round communications. The second milestone will be the final unfurling of the solar cell panels. With this achieved

and with 3-axis stability it will be possible for controllers to ensure maximum power availability for the satellite and optimum operating conditions for everyone. Deployment of the solar array will allow the release of the HF antenna system, at present coiled up inside the space-frame. This will add another dimension to operation on AO-40. Keep watching the various AMSAT news services via Internet or packet radio for the latest on these milestone events.

First Australian school contact with the International Space Station

March 20th 2002 was a very special day for Tony Hutchison, VK5ZAI, Australian ARISS Co-ordinator and his assistants in Tasmania, Bill Lynd, VK7KHZ, and Dick van Beek, VK7KVB. International Space Station astronaut Carl Walz, KC5TIE, talked directly on 2 meters with youngsters at Zeehan Primary School in Tasmania.

The full story is told by Dick van Beek VK7KVB on page 18.

Then, just a day later, Astronaut Dan Bursch, KD5PNU, on board the International Space Station answered 20 questions put to him by school children on March 21.

Two of the questions came from his own children who attend an elementary School in Nassau Bay, Texas.

The children spoke with Bursch via an Amateur Radio and a tele-conferencing linkup. At the time of

writing, pictures and audio clips of the above events are available courtesy of the ARRL on http://www2.arrl.org/news/stories/2002/03/22/3/?nc=1

Exciting Times Ahead for Indian Amateurs (and for the rest of us too!)

According to messages appearing on the AMSAT-BB, Amsat-India's proposal for project VUSAT is at a highly advanced stage and nearing final approval by the Indian Space Research Organisation (ISRO).

It is likely that the launch will be scheduled during 2003. Possible configuration would include a mode-B (UV) linear transponder built by Indian amateurs, a DX transponder (a Dutch/ Italian project), an FM-message beacon and a telemetry beacon in independent modes of operation. VUSAT will fly on a 40-kg micro-satellite on ISRO's Polar

Satellite Launch Vehicle as a co-passenger. It will be India's first micro-satellite.

At present the status of the project is as follows. The working model of the Dutch transponder has been delivered and is undergoing tests. The Italian transponder has been dispatched and is

expected any time. The UV linear transponder and message beacon are still under development. The circuit board for the telemetry beacon has been delivered. It seems that 2002 and 2003 will be exciting years for Indian radio amateurs and for all of us when VUSAT is launched.

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A 'sure thing' QSO

Those of you who have managed a QSO with Ed, P5/4L4FN will be pleased to know that the ARRL DXCC desk has confirmed that his current operations are regarded towards DXCC. This is good news, not only for those who have already worked Ed but it will no doubt provide the spur for others to get on the air to achieve a 'sure thing' QSO.

The DXCC desk has also confirmed that the VP8THU (South Sandwich Islands, 18th - 22nd of Jan) and VP8GEO (South Georgia, 26th of Jan – 6th of Feb), EP3UN (Iran) and also the 3V8DJ and 3V8SZ (Tunisia, March 2001) operations are also being accepted.

A snippet in The Daily DX for the 29th of March says that the New York Times reported that "Papua New Guinea voted to grant autonomy to fractious Bougainville Island, taking the archipelago a vital step closer toward ending the South Pacific's longest-running conflict." They continued "PNG analysts say the election of an autonomous Bougainville government can not be held before 2003, citing six months to write a constitution and six to eight months to complete weapons disposal". Look out, we may well be about to have another new DXCC entity appearing on our doorstep.

Mirek, 7X0DX (aka VK3DXI, 9V1XE) has been busy from Algeria recently and has made the headlines by making the first ever satellite contacts from Algeria using UO14. He also says that his activity on 80 metres was much better than expected and is planning some 160 metre operations when he returns. Up to date details and logs for 7X0DX are available at http://www.7x0.sp5zcc.waw.pl

There is quite a bit to report this month, and everyone should find something that piques his or her interest. Get on the bands and have a listen for that piece of rare or interesting DX, and if you manage to find and work it let me know.

The DX

EP, IRAN. Stig, LA7JO, is currently active as EP3UN. He has been heard recently on the 30m, 15m and 12 metre bands using CW. Best frequencies and times to listen out for him are 10103 kHz after 0215 UTC and 21017 and 24901 kHz between 1400 and 1630 UTC. (TNX OPDX)

EP, IRAN. Abdullah, EP2FM has been operating RTTY on 20 metres around 0300 to 0400 and also at 1600 UTC. (TNX OPDX and ARRL DX Bulletin)

FG, GUADALOUPE. Pierre, F6FXS says he will be active as FG/F6FXS from Guadaloupe (NA-102) from the 17th of April until the 16th of May 2002. He will be operating CW only and running modest power, approx. 30 - 40 Watts, to a long wire antenna. His most active times will be between 1400 – 1600 and 2100 – 2200 UTC on 28030, 21030, 14030 and 7023kHz +/- QRM. QSL is via F6FXS. (TNX La Gazette du DX and 425 DX News)

HV, VATICAN CITY. Be on the lookout for HV5PUL from the Vatican City. This call will be active on all HF bands and 6m on the 16th of May. More information regarding the operation is available on their website at http://www.pul.it/hv5pul.htm (TNX IW0DJB and 425 DX News)

JT, MONGOLIA. Nicola, I0SNY and Gianni, I8KGZ report that they will be operating from Ulaanbaatar, Mongolia as JT1Y. The operation will last for a couple of weeks beginning on the 21st of May. QSL via I0SNY.

OD, LEBANON. Max, IW0GXY has been granted permission to operate on 6 metres from Lebanon using the callsign OD5/IW0GXY. Activity is expected to last at least until the end of June with a good possibility of extending through until September. Further details can be found on Max's website at http://www.qsl.net/iw0gxy/index.html (TNX OZ6OM and 425 DX News)

OX, GREENLAND. Per, OZ1EQC will be active from Greenland (NA-018) on 10, 15, 20, 30, 40 and 80 metres using CW, RTTY, PSK31 and SSTV modes as OX/OZ1EQC. He plans to be on air over the period of the 23rd of April until the 8th of May. Per also plans on some operating from NA-134 and NA-220 if conditions permit. QSL via OZ5KU, Kurt Jensen, Thuroevej 27 Starup, Haderslev, Denmark. TNX IZ8BRI and 425 DX News)

T9, BOSNIA-HERZEGOVINA. Bernard, F5LPY, will be active as T9/F5LPY until the end of May. He can be found nearly every day around 2030

UTC, on 20 metres CW. He may possibly QSY to other bands if requested but be aware that when working on 40 metres Bernard uses a very sharp filter to combat violent local QRM so you may have to wait patiently while he finely adjusts the tuning on his receiver to get you within his passband. He can also be found working SSB every Sunday morning between 0700-1030 UTC on 20 metres. QSL via F5LPY (please no cards to the T9 bureau). Bernard will QSL 100%, including SWL reports, after he returns home. (TNX F5LPY and OPDX)

TM, FRANCE. Patrick, F6OIE will be active as TM0A from the 19th of May until the 2nd of June. QSL to F6OIE. (TNX F6AJA and 425 DX News)

TM5, FRANCE. Dom, F5SJB, will again be active as TM5CW. His activity will be CW only, running QRP, between the 18th of May and the 1st of June. TM5CW is valid for the Lons-le-Saunier City Telegraphy Award and a special QSL can be obtained via the Bureau or direct to F5SJB, Dominique Meige, F-39130 HAUTECOUR, France or via SPRAT. (TNX F6AJA and OPDX)

TN, CONGO. Josep Gibert, EA3BT and his XYL Nuria Font, EA3WL plan to be active from Congo between the 17th and 27th of May. The couple have requested

the calls TN3B and TN3W but no confirmation as yet whether these will be available. They plan to operate two separate stations each comprising beams and dipoles on 80m – 6m metres using SSB, RTTY and some CW. QSL via EA3BT. (TNX EA3BT and 425 DX News)

V7, MARSHALL ISLANDS. Jim Todd, KC7OKZ/V73KZ and his wife Carol, KC7TSX/V73SX are currently on Majuro (OC-029) in the Marshall Islands. Sometime during the next couple of months (dates to be announced) they plan on doing some operating from Ujelang Atoll (OC-???) too. (TNX V73KZ,

Islands On The Web and 425 DX News)

VQ9, CHAGOS ISLANDS. Jesse Falquez, AB5RY will be operating as VQ9J from Chagos over the next few months. He plans on operating on all bands 160 – 10 metres using CW and SSB. Jesse has excellent antennas and will be running 100 watt. QSL direct only via K5QM with a SASE. (TNX K5QM and 425 DX News)

XW, LAOS. Fabrizio, IN3ZNR will be active again as XW3ZNR from Vientiane, Laos from the 24th of April until the 4th of May. He plans to active on 28475, 21375, 14275, 7075 and 3775 +/- QRM

and listening 5 - 10kHz up. His equipment will comprise an amplifier, tribander yagi, dipole and a delta loop for the low bands. QSL via IN3ZNR, Fabrizio Vedovelli, Via Gramsci 27, 38100 Trento - TN, Italy. (TNX IN3ZNR and 425 DX News)

YA, AFGHANISTAN. Chris, G0TQJ says he will be travelling to Afghanistan around the 15th of April for two or three months. He hopes he can obtain a permit to operate and if so plans to be active on RTTY and SSB during his spare time. QSL via G0TQJ. (TNX G0TQJ and 425 DX News).

Special Events

Belgian Amateur Radio operators have been granted permission to use special prefixes in commemoration of the "Battle of the Golden Spurs" in 1302. Dutch speaking Belgian hams may use the OS prefix instead of ON and all Belgians may use the OR prefix instead of ON during any contests. These prefixes may be used only between the 18th of May and the 11th of July. (TNX The Daily DX)

The Midlands Amateur Radio Club of South Africa will be operating two special event stations during the weekend of the 3rd to the 5th of May. The event will serve to commemorate the various roles played by the British, Boers

and Zulus during the "Anglo Boer South African War of 1899-1902". The callsign will be ZS100ABW. The two separate stations will be operating mainly on SSB from Lancaster Hill, Vryheid in KwaZulu Natal, South Africa from approximately 1600 UTC on the Friday until the early hours of Sunday morning. A special 'Remembrance Service' will then be held in recognition of all those who lost their lives in the "Battle of Holkrans". Operations will take place preferably on 40 and 20 metres with 80 metre activity during the evenings (depending on the prevailing conditions). All contacts will be acknowledged with an attractive QSL

card. Please QSL either via the Bureau or direct to Midlands Amateur Radio Club, PO Box 100220, Scottsville, 3209, South Africa. A second special event station will be on air on the 31st of May to commemorate another battle that took place at Spioenkop. This was the scene of one of the bloodiest battles fought to relieve the city of Ladysmith, South Africa. Any queries regarding amateur operations of either of the two stations should be directed to Willie Axford, ZS5WI by E-mail to zs5wi@iafrica.com For more information regarding the history of the events contact Sean Friend at seanfriend@dorea.co.za (TNX ZS5WI and OPDX)

DXpeditions

OY and TF, FAROE ISLANDS and ICELAND. Tom, DL2RTK and Ric, DL2VFR will be heading into the North Atlantic again travelling by ship to OY and TF. Their itinerary is as follows:

- 20th – 22nd of May. OY/homecall from Streymoy Island (EU-018) in the Faroe Islands.
- 23rd – 24th of May. TF7/homecall from Vestmanneyjar Island (EU-071) from Iceland.
- 25th – 30th of May. TF1/homecall from Iceland (main island) (EU-

021). Activity will possibly include an activation of a Lighthouse, possibly between the 27th – 30th of May for one or two days from Grimsey Island (EU-168) and activation of WLH LH-0140 as TF5/homecall.

Activity will be on SSB and CW on 160 - 6 metres. RTTY and PSK activity will depend on the actual demand. (TNX DL2VFR, 425 DX News and OPDX)

CHATHAM ISLANDS. The Kermadec DX Association is undertaking a

DXpedition to Chatham Island (ZL7) later this year and is on the lookout for experienced SSB and CW operators. Ken Holdom, ZL4HU says, "as this will be a 24 hour per day operation, we will be looking for operators who feel they have the willingness and ability to operate during both day time and night time." If you are interested, or require further information, please contact Ken via Email at zl2hu@clear.net.nz or the Kermadec DX Association, P.O. Box 7, Clyde, Central Otago, New Zealand. (TNX ZL4HU)

Round up

VK0, MACQUARIE ISLAND. Toshi, JA1ELY reports that Peter, VK0MQI is a member of the 2002 Australian National Antarctic Research Expedition crew on Macquarie Island (AN-005), he previously operated as VK0AC from the ANARE Davis Base in 1998. Peter was expected to depart for Macquarie Island

in early March and will be stationed there until December 2002. While there he plans to operate on all HF amateur bands, and 6 metres, during his spare time. Peter is new to DX'ing so he asks that other operators be patient and go easy on him especially during the early weeks of his stint on the air. QSL via

JA1ELY. (TNX JA1ELY and 425 DX News)

The Colorado QRP Club has announced that the first annual CQC PSK Contest will be held on the 11th of May. For further details and information visit their website at http://www.cqc.org/contests/index.htm (TNX OPDX)

Club Notes

Adelaide Hills Amateur Radio Society

The March meeting was a members' Buy and Sell, as usual. Much "junk" became much "treasure", also as usual. A very pleasant, social evening.

The April meeting will be an interesting talk by a member of the Riverland Radio Club.

Any amateur visiting Adelaide on the third Thursday of the month is welcome to come and join us at the Blackwood High School in Seymour Road Blackwood at 7.30.

AHARS participated with enthusiasm in the John Moyle Memorial Field Day again this year. The point score was similar to that of last year but the distribution of the contacts across the bands was very different.

An enjoyable and successful weekend was topped off by a little extra effort when a large water tank was hoisted onto a roof in anticipation of the installation of a solar water heating system. Next year we hope there will be hot water available on demand. There is certainly plenty of sunshine at the field day site.

How's DX *continued*

S21FHQ is the callsign of the newly licenced Headquarters club station of the Foundation for International Amateur Radio Service (FAIRS) in Dhaka, Bangladesh. At the time of writing the club station equipment is pretty basic and the antennas are simple wires. The members hope to erect a beam or two in the near future. The members are expecting high demands for their operating and training activities. If you manage to work the station QSL's can be sent via N4VA. (TNX N4VA and The Daily DX)

P5, NORTH KOREA. Hrane, YT1AD, has released a short statement via Nenad, VE3EXY concerning his failed attempt at operating from P5. He says, "We arrived to Pyongyang on March 5th, where we were welcomed by representatives of Ministry of Telecommunications and Foreign Affairs. We were stationed in Yangakdo Hotel, on the bank of the river with the same name. The hotel has 47 floors, and we were on the 40th floor,

with almost ideal conditions for work. All our equipment was put together, and we were about to start our operation with previously assigned callsign P5A. Unexpectedly the uniformed military official appeared, and imposed ban on our operation, until the permission of military authorities is obtained. It was supposed to be available on March 8th, but nobody showed up, possibly because of holiday. We did not want to risk starting unauthorized operation. Meanwhile we had fun listening all pirates pretending to be us, when we did not make a single contact. Finally, the military official showed up on Sunday and simply said 'No transmission until further notice.' Than we did not have any choice but to leave. After landing in Beijing, our only comment was: Never Again!" (TNX YT1AD)

We can only guess at the reasons behind the last minute refusal of permission for Hrane, YT1AD to operate, perhaps the North Koreans were aware

of, and annoyed by, the pirate operators. If so, this is a sad indictment on our hobby of amateur radio and our attempts at being responsible and respectful amateur radio operators. I can only repeat my opening comments in last months DX Notes, "some types of amateur operators we can all do without!"

Sources

Another rather busy period on the air coming up, and our thanks go to the following individuals and organisations for the information contained in DX Notes this month. 7X0DX, LA7JO, OPDX, IW0DJB, I0SNY, OZ6OM, IZ8BRI, F5LPY, F6AJA, EA3BT, K5QM, V73KZ, IN3ZNR, G0TQJ, DL2VFR, ZL4HU, JA1ELY, N4VA, ZS5WI, YT1AD, Islands On The Web, ARRL DX Bulletin, La Gazette du DX, 425 DX News and The Daily DX.

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Contests

Ian Godsil VK3VP
contests@wia.org.au

Be prepared

Greetings to all readers.

The fact that last month my wife and I moved house and I am still in the process of setting up some antennae (as well as getting all the boxes unpacked!) points out to me that the year is proceeding apace and that the VK/ZL contest season is not far away again.

Should you need to contact me, my email address is still contests@wia.org.au, but my only phone number is 0408 123 557.

As well as suggesting that it is time to check your station right through again, may I also suggest that you think carefully about your personal preparation for a contest.

Few, if any, of us can go without sleep for too long and whilst we do not normally have contests that last for 48 hours in VK or ZL, nevertheless it is important to consider what you have been doing in the week and days before a contest. After all, what use is it if, at 2200/2300 hours you are falling asleep or just sending silly messages or entries in the log because your concentration is flagging?

I have read that for some operators they get to the stage where they have no

conscious recollection of having made certain contacts, but there they are in the log! This, I believe, is called 'microsleep' by the scientists. It is a known problem for long-distance motorists and can be a lethal one, eg. if you are driving at a fair speed and go into microsleep, you are not conscious for that brief period, so you could drift off the road. At least if this happened in a contest you would not kill yourself, but it could produce some interesting results!

Even though most of us are not entering long contests (where the Escape or whatever is your cancel key for your logger takes a pounding at 3 a.m.), the moral to all this is to make sure that you have had plenty of rest in the days leading up to a contest.

There are many, many sites on the Internet, which deal with sleep and sleep-deprivation. You may care to look

at some of these –
http://www.sleepfoundation.org/
http://www.sleephomepages.org/htdocs/hotlinks.html
http://www.sleepquest.com/
http://www.sleepnet.com/depriv.htm
http://www.sleepnet.com/definition.html

Special Event

Last month I noted the coming of a special event to mark the Golden Jubilee of Her Majesty Queen Elizabeth II.

Please mark this in your diaries. It will be a similar format to the Commonwealth (BERU) Contest, but of course a once-only event. And I remind you that a dedicated contest logger, SDJ, is available free at *www.ei5di.com*.

73 and good contesting,
Ian Godsil VK3VP

Rules: Asia-Pacific Sprint 2002

SSB: Sat 8 June 1100Z–1300Z

CW: Sat 19 Oct 1100Z–1300Z

Object: For stations outside Asia-Pacific region to work as many AP stations as possible in the two-hour limit.

Bands: 20m and 40m only.

Power: max 150 W

Category: Single operator, single radio only.

Exchange: RS/RST plus serial number starting at 001. Stations may be worked only once per band.

Multipliers: prefixes as per WPX rules (Once only, not once per band).

QSY Rule: Calling station must QSY after a QSO at least one kHz on CW and six kHz on SSB.

Final Score: total of QSOs by multipliers.

Logs must contain complete QSO information plus Summary Sheet

indicating claimed score, CQ Zone and T-shirt size.

Send logs by mail to: James Brooks, 26 Jalan Asas, Singapore 678787 three days after contest. Logs may be sent by email in ASCII format to: jamesb@pacific.net.sg

Rules: Novice Contest 2002

from Bob Hockey VK2FI, Contest Manager

Sat 15 June - Sun 16 June 0800Z – 0800Z

Object is to encourage amateur operation in VK, ZL and P2 and to promote contacts with Novice and Club stations. Only VK, ZL and P2 stations are eligible to compete and stations in the same call area may contact each other for contest credit.

Bands: Novice frequencies in the 10, 15 and 80 metre bands. No cross-band operation permitted.

Categories: Single Operator, Club stations and SWL stations.

Modes: SSB and CW.

Call "CQ N" on CW, "CQ Novice Contest" on SSB and if you are involved with a club station then call "CQ Novice Contest Club Station" followed by your callsign.

Exchange RS(T) and serial number commencing with 001 and

May	4/5	Danish SSTV Contest	
May	4/5	10-10 Intl. QSO Party	(CW/RTTY)
May	4/5	ARI Intl. DX Contest	(CW/SSB/RTTY)
May	11/12	VOLTA RTTY Contest	
May	11/12	CQ-M Intl. DX Contest	(CW/SSB/SSTV)
May	18	Sangster Shield (NZ) part 1	(QRP CW)	(May 02)
May	19	Sangster Shield (NZ) part 2	(QRP CW)	(May 02)
May	18/19	Baltic Contest	(CW/SSB)
May	25/26	Anatolian RTTY WW Contest	
May	25/26	CQ WW WPX Contest	(CW)	(Feb 02)
June	1	VK/trans-Tasman Contest		(May 02)
June	1/2	South American WW CW Contest	
June	8	QRP Day		(Apr 02)
June	8/9	ANARTS WW RTTY Contest	
June	8/9	Queen Elizabeth II Golden Jubilee Contest	(CW/SSB)	(Apr 02)
June	8	Asia-Pacific Sprint	(SSB)	(May 02)
June	15/16	Novice Contest	(CW/SSB)	(May 02)
June	22/23	SP QRP Contest	(CW)
June	22/23	Marconi Memorial HF Contest	(CW)
June	22/23	ARRL Field Day	(All modes)
July	1	RAC Canada Day Contest	(CW/SSB)
July	6/7	Internet 6m Contest	(CW/SSB)
July	13/14	IARU HF World Championship	(CW/SSB)
July	20	Pacific 160 Metres Contest	(CW/SSB)	(June 02)
July	27/28	Russian RTTY WW Contest	(RTTY)
July	27/28	IOTA Contest	(CW/SSB)
July	27	Waitakere Sprint	(SSB)

incrementing by one for each subsequent contact. SWLs may log up to 10 sequential contacts made by a station and then log at least five other stations before logging the previous station again. The five stations so logged need be a minimum of one contact only.

Score: two points for contact with Full Call/Intermediate stations; five points for contact with Novice stations and 10 points for Club stations. On CW score DOUBLE points.

SWLs score two points for Novice to Full/Intermediate, and Full to Full; five points for Novice to Novice and 10 points for Club stations.

Note RULE CHANGE:

Intermediate stations (J and K calls) now classed as Full Calls.

Logs headed "VK Novice Contest 2002" must show date, time in UTC, band, mode, station contacted, exchanges and total claimed score at the bottom of each page.

A **summary sheet** should show callsign, name, mailing address, category, section, number of valid contacts, claimed score, signed declaration showing signature of operator or responsible club officer for club stations.

Entrants may only submit one log per mode. Logs for entries where the operator uses more than one callsign whilst operating in the contest will not be accepted.

Mail logs to: Novice Contest Manager, Westlakes Amateur Radio Club Ltd., P.O. Box 3001, Teralba, NSW, 2284, by 16 July 2002. Logs may also be e-mailed to: westlakes@hunterlink.net.au

Awards include the Clive Burns Memorial Trophy for the Novice with the highest CW score and the Keith Howard Trophy for the Novice with the highest SSB score. These trophies are held at the Wireless Institute of Australia Federal Office, with a plaque being sent to both winners.

Certificates will be awarded to the highest-scoring Novice in each call area and the highest-scoring station in each section. Certificates are

N.Z.A.R.T. Sangster Shield Contest

18 and 19 May, 2002   0800Z – 1100Z each day

From Stan White ZL2ST, NZART Contest Co-ordinator

Presented to the amateurs of New Zealand by Mr R Sangster in 1927, the Sangster Shield is for annual competition to be won by the most efficient station (equipment and operator).

Power: To compete for the Sangster Shield and Trophies the **output of the transmitter must not exceed 5 watt.** Higher power stations are requested to operate above 3530 kHz.

Mode: CW to CW contacts on 80 metres only are permitted.

Repeat Contacts: QSOs with any one station are permitted **once only each half hour,** based on an "even half hour" basis, eg 0800 – 0830,0831 - 0900 etc.   It is **not permissible to claim QSOs with the same station "twice running".**

Cypher system:

RST followed by branch number followed by power output - eg 569/ 11/04 (ie. report 569; branch 11;

power 4 W). Powers over 100 W will be given as 99, while below 10 W will be preceded by 0. VK stations are required to give RST plus a serial number beginning at 001.

Scoring for VK entrants:

VK using 5 W or less to ZL with Power given as 5 W or less - 10 points.

VK using 5 W or less to ZL with Power given as 6 W or more - 5 points.

VK using 6 W or more to ZL with Power given as 5 W or less - 5 points.

VK using 6 W or more to ZL with Power given as 6 W or more - **Not permitted for contest purposes.**
 VK to Overseas - **Not permitted for contest purposes.**

Final score is total points multiplied by the Number of Branches worked.

Logs: Quarto or A4 size paper -

preferably NZART log sheets.
 Data in this order:- date; time; callsign; RST sent; RST received; points claimed.

Summary Sheet to show: entrant's callsign, name and address in BLOCK LETTERS. Number of contacts with stations using 5 W or less. Number of contacts with stations using 6 W or more. List of different branches worked with the number and name of each branch as given in the Call Book (in branch number order) plus the callsign of the station claimed for that branch.
 Total score. Description of equipment, antenna and output power used. Signed declaration that all contest rules have been observed.

Send Logs by mail to: Contest Manager, Glenn Kingston ZL2KZ, 53 Tannadyce Street, Wellington 6003, New Zealand, by 19 June 2002.

Rules: VK/trans-Tasman Contest

from Bruce Renn VK3JWZ, Contest Manager

1st Saturday in June 2002,   0800 UTC to 1400 UTC, (in 6 UTC one hour stages).

Aims of Contest

a) The VK/trans-Tasman Contest was conceived as a reciprocal event to the NZ Memorial Contest (held in July). The main emphasis is on VK—ZL contacts.

b) The scoring system was devised in an attempt to:

  • compensate for geographical location and useable beam time to provide, so far as is possible, a level playing field for all.

  • encourage participation by VK5, VK8 and VK6s.

  • promote trans-Tasman contacts, by giving bonus points for VK/ ZL contacts.

  • provide some incentive for the clever Operator, by allocating additional bonus points for working multiple "call-areas" in any one hour. The value of these bonus points has been structured to reflect the difficulty of the achievement in regard to distance and population densities.

c) Promote/give recognition to QRP operators and SWLs.

d) Provide a reasonably short event that doesn't impinge too much on family life or sleep time, while giving 6 hours of constant on-air activity.

General

a) The Contest is open only to *all* VK and ZL callsigns.

b) The Contest shall be in 6 X 1 hour stages, and stations can only be reworked after the commencement of each hour.
 However, stations worked during the 5 minutes before the hour, cannot be reworked until 5 minutes after the hour.

c) A station can be worked on Phone and CW, during any one hour stage, only if the Operator is contesting both Categories or QRP Category.

d) Sequential numbers, commencing at 001, shall be given and received for all contacts made during the Contest. (RST numerals *not* required.)

e) Contest details; Rules and a suitable log sheet are available on the Contest web-site: http:// home.iprimus.com.au/vktasman

Any queries or constructive criticism

should be attached to the log, or emailed to vktasman@hotmail.com.

Bands: 80 metre band.

Frequencies:

  Phone: 3.540 to 3.625 MHz.

  CW: 3.500 to 3.550 MHz.

  Note: It is not in the spirit of the Contest to "park" on a frequency. While this will not be policed, 20 minutes is considered to be the maximum time between QSYs.

Modes: LSB (DSB optional for QRP), CW
 Max. TX Power:

  LSB: 100 watt pep. (QRP 5 watt pep, LSB or DSB).

  CW: 100 watt pz. (QRP 5 watt pz.)

Categories:

Cat 1. Single operator - Phone.

Cat 2. Single operator - QRP (Phone and/or CW). - Also eligible to enter Cats 1 or 3.

Cat 3. Single operator - CW.

Multi-operator:

  • Club/Group stations shall be permitted to enter Category 1, on the proviso that only **ONE** Operator

is used in each 1-hour segment, to perform **ALL** functions without assistance (ie: TX/RX; log and time keeping).

- Any prize awarded to a "multi-operator" entry shall also be awarded equally to the "single-operator" entry that would have otherwise won that prize.
- Club/Group stations are ineligible for the "VK/trans-Tasman Trophy".

Callsigns:

a) VK4s north of the Tropic of Capricorn shall add "Central" after the suffix of their callsign, for all contacts with ZL stations.

b) QRP stations shall add "Quebec" after the suffix of their callsigns, for all contacts.

Scoring:

a) The final score shall be the sum of the five (5) highest scoring hourly segments, with the lowest hourly score not counted.

Note: This gives the 2p the option of working only 5 hours, if they choose not to stay up until 2am to try to improve their score.

It gives VK6s (who only have 3 hours competition after 7pm) 5 hrs to complete a full Log, if they choose not to start until 5pm to avoid poor propagation after 4pm./ 0800 UTC.

b) VK shall be divided into 3 zones (for scoring purposes):

"East" = VK1, VK2, VK3, VK4 (south of Tropic of Capricorn), VK7 and VK9.

"Central" = VK4 (north of Tropic of Capricorn), VK5 and VK8.

"West" = VK6 and VK0.

c) VK to VK   (except VK/East to VK/West) = 3pts

VK/East to VK/West = 3pts + 3 (distance) = 6pts

VK/East to ZL = 5 (distance)+1 (band time)+5 (bonus) = 11pts

VK/Central to ZL = 7 (distance)+2 (band time) +5 (bonus) = 14pts

VK/West to ZL = 10 (distance)+5 (band time)+5 (bonus)= 20pts

d) ZL to ZL = 3pts

ZL to VK/East = 5 (distance) + 5 (bonus)   = 10 pts

ZL to VK/Central = 7 (distance) + 5 (bonus) = 12 pts

ZL to VK/West = 10 (distance) + 5 (bonus) = 15 pts

(5 bonus points awarded for each

trans-Tasman contact)

e) During each 1 hour segment, additional bonus points shall be awarded as follows:

VK working 4 X VK call areas = 20 bonus points

VK (East) working 3 X ZL call areas = 30 bonus points

VK (Central) working 3 X ZL call areas = 40 bonus points

VK (West) working 2 X ZL call areas = 40 bonus points

ZL working 4 X ZL call areas = 20 bonus points

ZL working 3 X VK (East) call areas = 30 bonus points

ZL working 2 X VK (Central and/or West) call areas = 35 bonus points

Note: "Call Areas" are identified by the numeral in the callsign. Multiple "groups" of call areas worked in any hourly segment shall score multiple points (eg: VK (East) working 3 X ZL call areas, twice in one hour = 60 pts.

f) QRP to Base Stn = 2 bonus points to each party.

QRP to QRP Stn = 4 bonus points to each party.

QRP using homebrew RX & TX = 1 bonus point per contact.

Logs:

a) A separate Log shall be submitted for each Category entered.

b) Provide a separate Log sheet for each hourly segment, with hourly "contact" sub-totals and "multi-call area bonus" shown at the bottom. Number each Log sheet (eg: 2 of 6).

c) For each contact, logs shall record callsign of station worked; numbers given and received, and UTC time.

d) A separate column shall be included at the right of each log entry, for contact points score, - (should be calculated after the Contest).

e) If six (6) hours are contested, the Log sheet for the lowest-scoring hourly segment shall still be submitted for cross-checking, but shall be indicated as "not included in final score", by ruling a red diagonal line through the page.

g) Logs, or log entries that are not clearly legible, in the opinion of the Contest Manager, will not count.

Log Summary

- Logs shall be accompanied by a summary showing the operator's

name, address, email address (if available), callsign, category(s) entered, and total points score claimed.

- VK4s in "Central" zone shall identify as such at the top of their Log Summary sheet, by writing "Central" after their callsign suffix.

- QRP stations claiming "homebrew" points shall indicate accordingly.

- It will be assumed that all entrants submitting logs will have contested in compliance with the Rules.

Lodgement of Logs

Logs must be received either by post, to: VK/trans-Tasman Contest, 28 Crampton Cresc., Rosanna, 3084, Vic, Australia; or by email to: vktasman@hotmail.com in either "Word 2000" (or earlier), or "Text File" (Notepad) formats.

Note: Closing date for receipt of Logs shall be 0700 UTC, 10th July.

Operators are requested to submit their logs (even if you don't think you will win). This will justify the effort and expense involved by the Contest Manager and ensure the on-going success of the Contest.

Awards:

VK/trans-Tasman Trophy: Highest Score

Certificate	1st	Phone Score
Certificate	2nd	Phone Score
Certificate	3rd	Phone Score
Certificate	1st	QRP
Certificate	1st	CW
Certificate	2nd	CW
Certificate	3rd	CW
Certificate	1st	VK
Certificate	1st	ZL
Cert. (Most stations heard)		1st SWL

Certificate (Night-owl's Award) Top Phone score in final hour

Certificate (Night-owl's Award) Top CW score in final hour

Certificate Lowest Log Score

Publication of Rules and Results:

a). Rules will be published in the WIA "AR" and NZART "Break-in" magazines, and on the Contest website.

b). Results will be published in "AR", "Break-in" and if possible, in "Radiomag" magazine.

c). The first 10 place getters in each Category will be published on the Contest website no later than 20 August 2002.

VHF – UHF

AN EXPANDING WORLD

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All times are in UTC.

50 MHz

The Second hump in the current cycle has been in full swing with contacts above and below the tropics. Mike VK2FLR reports … the autumn equinox has kicked off to a good start in the Sydney area:

Saturday 22 March (21/3 UTC day): 2148 ZF1DC 55, 2156 TG9SO 54, plus YS1RR heard. VK2ZXC also worked into Cuba. On the 24th of March (22/3 UTC): 2035 K6MYC 529. I was able to snatch Mike from under a wall of ZLs - I have now worked K6MYC on 6 and 2 metres! Heard were other weak Ws on SSB, 5W1SA at up to S4 working a pileup of East Coast VKs, good backscatter from VK3, VK4 and ZL3TY, plus FO3BM and V73GT.

Tuesday 25 March (24/3 UTC): 2138 P43JB 559 (last heard Aruba in 1989!), 2150 PJ2/DL4WK 549, on the 26th March 45.240/250/260 and 46.172 backscatter to the north-east, weak central American signals around but not heard at this QTH… Mike VK2FLR

Ray VK4BLK reports … here is my report of recent 50 MHz activities. 26/3 at 2313Z, P49V 55/55, 30/3 at 0210Z, TI5KD 53/43, 30/3 from 2313Z to 2341Z, KB6NAN, K6QXY, K6FV & N6RA, 31/3 at 0110Z, W6BYA 59/59, 4/4 at 0148Z, TI7WAM 559/559, 4/4 at 0152Z, TI5BX 55/55. Also during the 144 MHz openings into ZL in March, 30/3/02 at 0918Z, ZL1IU 52/52, at 2049Z, ZL1AVO 56/58 … 73 Ray VK4BLK

Tony VK4CH reports … Good propagation on 6 m over Easter break

from VK4. Stations worked in K6 (California) XE2 (Tijuana) and FK8 (New Caledonia) at between 2300Z 310302 and 0100Z 01040Z. Lots of backscatter heard with VK4FNQ and VK4ABW up in North QLD reading up to S3. ZL seemed to having a good time too as many of the K6s and XE2s were heard working them. JA, HL and the other usual northerners have been very strong every night from 0600Z to 1000Z. Last Europeans worked were 9A (Croatia) two weeks ago.

Looks like the cycle hasn't finished just yet! 6 m was open again to the Pacific and north last night 10/4/02. Apart from many, many JAs, KH6 was worked and heard on SSB & CW with NH6RO and KH6SX reading 5/5. A new beacon was heard on 50.013, V73SIX. It was up to 5/9+20 at 10:30 local but no stations were heard from the Marshall Is area. The propagation was so good to JA last night that I worked one station that was using a 2 W SSB handheld with a quarter wave ground plane attached to the railing on his unit. …Tony VK4CH QG64JQ

VK4CXQ reports on 6 metre activity from Townsville— mid Mar-Apr 2002 … what a difference a month makes! This time last month there were EUs

everywhere but except for 16-17 Mar with QSOs into IK LZ OK SP S5 and DL the bottom has fallen out of the ionosphere!! Since 17 Mar only QSOs into the Pacific area were heard with a few contacts into TI and XE (very few) All JA districts were active from JA0 to JA9 while 9M6 and DU1 were there at times along with a few more Chinese stations that usual. VR was also heard late at night. Most activity was from KH6 with a few stations up there calling into Japan and Europe.

V73 was heard briefly as was FK8.The occasional HL and DS station also came through. Still waiting on openings to USA, Central and South America … 73 VK4CXQ

Scott VK4JSR reports … 6 m has proven to quiet good late in the evening (1300Z – 1430Z) with Hong Kong (VR2) and China (BV/BG) being worked in QG62 over the last few days. A VK2 was also heard Sunday night on scatter calling the VR2's. These are the same conditions that prevailed last year prior to the LP opening between VK4 (QG62) and LU8MB. Those able to keep their eye's opens should spend a little time monitoring the indicators and listening to the band… it could be worthwhile!!! … Scott VK4JSR

144 MHz & above

Gordon VK2ZAB reports … Contacts from here this morning: 2/4/02Z, 2116Z, VK4AML 2M SSB 5/5 5/3 Caseldine [Bris], 2117Z, VK4DFE 2M SSB 5/5 5/3 Maleny, 2118Z, VK4TZL 2M SSB 5/2 5/2 Henry Bay, 2120Z, VK4AML 70 cm SSB 5/2 5/2 Caseldine, 2138Z, VK2TQP 2M SSB 5/5 5/6 Coffs Harbour, 2142Z, VK2ZCV 2M SSB 5/8 5/9 Pt. Macquarie,

2154Z, VK3II 2M SSB 5/2 5/6 Coronet Bay, 2207Z, VK2ZRE 2M SSB 5/5 5/5 Adaminaby, 2210Z, VK1BG 2M SSB 5/6 5/7 Canberra, 2211Z, VK1CJ 2M SSB 5/5 5/9 Canberra, 2224Z, VK2AAS/p2M SSB 5/7 5/9 Molly Mook, 2228Z, VK7MO 2M SSB 5/3 5/3 Hobart, 2244Z, VK3AXH 2M SSB 5/2 5/3 Mount Helen, 2304Z, VK1BG 70cm SSB 5/8 5/8

Canberra, 2311Z, VK7JG 2M SSB 5/1 4/1 Launceston, 2313Z, VK2TWR 2M SSB 5/8 5/9 Nimmitabel, 2319Z, VK2TWR 70cm SSB 5/2 5/3 Nimmitabel, 2352Z, VK2FO 2M SSB 5/2 5/% Ulladulla.

Unfortunately nothing heard of Wally VK6WG operating portable / mobile down the east coast of Tasmania in spite of some four hours of off and on calling.

Rex VK7MO came up several times during this period

On 6/4/02 the usual contacts were made on 2 m SSB from Maleny [VK4] to Somerville [VK3]. Less than usual [having done it only once before] was the contact with VK7KPB on Flinders Island at 2231Z on 2 m SSB 5/5 5/6 and at 2248Z on 70 cm SSB 5/2 5/2. Peter made contact with several stations mainly near the coast in Sydney and south. Was reported to be still working into southern NSW on both 2 m and 70 cm in the afternoon. [7/4/02Z]. Gordon VK2ZAB

Ian VK3AXH reports … Good propagation from Ballarat both east and west directions Friday 5/4/2002 evening. Beacons heard VK5RSE 2 m 5x9, VK5RSE 70 cm 5x9, VK7RAE 2 m 5x5, VK7RAE 6 m 5x6 & VK3RGI 2 m

5x3. VK5VF was visible on spectrogram but not audible. Had a QSO with Colin VK5DK running 5 watts both ends on 2 m and 70 cm 5x9+, then had a contact on 1296 both around 15 watts 5x9+ both ways. On Saturday morning 6/4/2002 the Tassie 2 m beacon still around S5, Mount Gambier 2 metre beacon had dropped down but 70 still S9…. Ian VK3AXH

Digital "DX" Modes

This part of the column was originally titled WSJT but with JT44 being implemented rapidly in the last few months along with PSK31 activity on 50 MHz, I have bent with the pressure. It is amateur radio. This month we have reports of the first VK to ZL Digital scatter contact as well as the first JT44 EME QSO out of Australia! If you want more information about WSJT & JT44, the best resource is that put together by Rex VK7MO at http://www.tased.edu.au/tasonline/vk7wia/

Mike VK2FLR reports … on 21 April I completed what was probably the first 144 MHz EME QSO out of Australia on JT44 with GM4JJJ. I was using a single yagi with no elevation; David GM4JJJ was using 4 yagis. Signals peaked at -19 dB in a 2kHz bandwidth! Some years ago I worked David on random CW EME when I had my four yagis up. With JT44 I don't need all that metal!

Just got this for GM4JJJ: Mike, great signal from you, peaking -15dB at times. Very frustrating because you were so strong I could hear you by ear but you obviously had noise problems and could not hear me. At one point early on I was sure you sent O reports (13:15) but after that I noticed that you were sending only calls again, so I had to go back to sending

calls and OOOOOOO again. Had almost given up hope as the moon was getting very low at your side and polarity had changed from H to V here then at 13:56 I got RO and finally got 73 at 1401. … Mike VK2FLR

The first VK to ZL WSJT contact occurred on 13/4/2002 between Rex VK7MO Hobart and Bob ZL3TY Greymouth RE57om, Western side of the South Island. Total path distance of 1950 km. ZL3TY received a 16 report (15db above noise) while VK7MO received a 26 report (7 dB above the noise). The contact took four or five readable pings in both directions to complete over a 45 minute period. Power used at each end of the contact was 100 – 200 watts

Rex VK7MO reports further … Bob ZL3TY will be on WSJT, FSK441 mode, on 20th & 21st of April 2002 from 0100 UTC to 0200 UTC on 144.230 MHz beaming VK. As he is the easterly station he will TX in the first 30 seconds. Bob will use single tones. To have a chance of working Bob you need to be within 2400 km - and have close to zero degree horizon in his direction. The distance decreases by about 108 km for each degree above the horizon. Sydney, Port Macquarie, Nimmitabel, Canberra, Launceston and Bairnsdale should all be in range.

I have run tests with Bob for six days

and completed on three - the last two in 30 and 35 minutes. Even when we did not complete call signs and reports were exchanged. The info received at both ends for this morning's test is copied below. The info in the columns is as follows:

1. Time of start of RX period
2. Time in seconds from col 1 when ping occurred
3. Duration of ping in ms
4. Signal strength of ping in dB above noise (Bob's best pig was 6 dB and mine 7 dB)
5. Report
6. Difference in frequency in Hz (under 200 Hz is OK)

For further details please consult the WSJT web site that is accessed at the following address which is the index page of the VK7 web site. Then go to the bottom of the index using the slider and click on WSJT Activity in Australia. http://www.tased.edu.au/tasonline/vk7wia/ … Rex, VK7MO

John VK3KWA reports … for information, the following received from Bert ZS6HS: The WSJT program has certainly caught on around here! Yesterday 21 April 2002 ZS6WB made a 6-metre contact with a W7 VIA THE MOON using JT44 … John VK3KWA

Microwave Round up—UK Visit

Since the last column I have been mostly overseas on a multi-legged business trip through the Middle East, UK and Asia. Amateur Radio took the back seat except for the first weekend in April when I managed (!) to arrive in the UK just in time for the inaugural Six Metre to Microwave Convention on Saturday the 6th of April 2002

Since the RSGB annual VHF Convention has now been discontinued,

individual Society committees have decided to organise their own events. The convention was a single day event, with on-site accommodation / meals and Bar available for both the Friday and Saturday nights, aimed at all interested in the spectrum above 50MHz. It was a joint effort of the RSGB Microwave Committee, the UK 6 metre Group and the RSGB VHF Committee. The Convention was held at the Rease Heath

Agriculture College, approximately 2 miles from Nantwich, Cheshire. That's about 260 km NNW of London and about 60km south of Liverpool.

After shifting a few airline flights to arrive in time, booking a rental car and accommodation over the Internet, from Dubai, a couple of days before the trip was on! I arrived at Heathrow at 7.00pm the Friday night before! Problem number one, the booking agency hadn't passed

on the rental car booking (they'd skimmed 12 pound off my credit card though). Luckily, as always seems to happen, I struck a helpful Australian behind the counter of "Brand X" rental cars.

I was soon on the way, armed with a basic knowledge of UK motorways, a GPS and a map of UK out the Emirates Airline magazine! Just in case, I'd entered in the coordinates of both the hotels and the location of the convention (thanks to the RAC Internet map service) into the GPS. The GPS already having 20,000 worldwide waypoints (I'd forgotten that!) so the tourist map was totally redundant!

I'd booked accommodation at Birmingham, just under an hour from the convention. The first test was at 10.30pm that night finding the hotel after driving up the M40. Bingo, a combination of luck and good management meant I drove straight there! The GPS beeped its 300m warning about the same time the Hotel sign came into view. This time the Internet booking had happened.

Next morning I set out around 8-30pm ringing Sam G4DDK to meet at the pre-arranged point on the M6 North of Wolverhampton. As it turned out Sam wasn't quite ready so I elected to drive on to Nantwich. In daylight it was easy finding Nantwich, but no signs to the Agricultural College. With some "Fox hunting" skills learnt many years ago and the GPS it took a just a few minutes. I was lucky, as it turned out a number of the UK attendees did get lost finding the place! Understatement for the day overheard on air "great day for a drive in Cheshire but a map and some signs would've helped!"

About 80 Amateurs attended including a number of Europeans, one

US and one VK (me) ham. Amongst those I met a few I had worked on 50 MHz (last cycle) but a good number came up to me and told of contacts with a few of the regulars in the 50 MHz part of this column in the prior weeks! Also Peter H44PT (I have forgotten his current G call) attended bringing back memories of his operations from H44 in the late 70's and early 80's. Others met included microwaver's Sam G4DDK and Peter G3PHO and Chris G4DGU, the original founder and owner of Mutek.

Trade stands were set up by the UK Six Metre Group (UKSMG), RSGB Microwave Committee, RSGB Publications, VHF Communications, Linear AMP UK, GH Engineering and Acom. It was heartening to see that there still are some UK manufacturers producing equipment (mostly linear amplifiers) for the market. There was also a small display of homebrew Microwave Equipment from Peter G3PHO.

Various lectures included 3 VHF lectures, 3 Six Metre lectures and 1 microwave lecture. I sat in on several including David G4ASR's "Making more miles on VHF". Controversially he quoted "Tropospheric is a beginners mode" and that Ionespheric DX is the real stuff! What else would you expect when Meteor Scatter rules supreme and most VHF DX working is the realm of "ping jockey's"!! The lecture was highly informative and amongst other things had audio clips of Chris VK5MC's EME signal and Geoff VK8GF's 6-m signal!

Another lecture, by Geoff G3NAQ tackled the race for the first Trans-Atlantic 144 MHz contact from UK to the North America. Apparently there has been a claimed WSJT contact over the 3500km path in late 2001. Ian White G3SEK gave a talk on High Voltage

power supplies. Ian is well known for his range of power supply designs/kits that provide almost bulletproof protection for triode and tetrode linear amplifiers (I have a set here in a 4CX800A amplifier). And Peter G3PHO gave us a travelogue from UK to the Microwave Update 2001 in the US including trudging through all those surplus stores!

I didn't attend any of the 50 MHz lectures as these ran concurrently with the VHF and above lectures. From comments, these were of similar quality and had similar number of attendees. I didn't attend the Dinner that evening, as I had to get back to Oxford before dark. The event was well organised but I'd safely put our own GippsTech Gippsland Technical Conference in the same category for quality and attendance (but with a lot better instructions on how to get there!)

Driving back was easy; I just followed the original GPS track back onto the motorway! The rest of the trip was smooth except for the wind turbulence from the odd BMW doing +120mph on the motorway!!

In closing

A handy site for that quick conversion from Lat & Long to Grid square and vice versa is at http://www.amsat.org/cgi-bin/gridconv courtesy of AMSAT.

I'll leave you with this thought..
"Dogs are like people. Usually only one in a group is barking at something in particular; the others are barking at him!"

73s David VK5KK

ar

GB50: *Amateur Radio for the Golden Jubilee*

Look for the unique callsign "GB50" (Yes; Golf Bravo Fifty) that will be established at Windsor Castle to celebrate the H.M.Queen Elizabeth II's Jubilee (50th Anniversary of her succession to the throne) from 29th May to 9th June 2002.

The station will be run by Cray Valley Radio Society (who made 48,000 QSO's from M2000A in 2000), in association with Burnham Beeches Radio Club, and with the support of the Radio Society of Great Britain.

"GB50" will be active on all bands from 3.5 – 50 MHz on CW, SSB, PSK31 and RTTY, and on 144MHz CW, SSB and FM from 0600 – 2100z daily.

You can check all the latest details at:
www.gb50.com
including full details of our Awards Program.

Ron Graham VK4BRG

Draft Australian ARDF/Foxhunting Lists

After suitable inspiration at the 2001 Urunga Convention, especially noting the kids involved, I thought it could be an advantage if we had a contact list of those involved with fox hunting/ARDF, also a list of venues where these activities take place.

The following is what I have put together. There is a lot of info missing and some of you may be able to add to, suggest other people/venues, remove yourself from the list, make other suggestions etc.

Please forward info to me and I will try and get the lists into shape.

Eventually, maybe we could have this list published, say annually, in AR.

Clubs, groups & individuals involved in fox/hidden transmitter hunting or ARDF

Contact information in various cities/towns (** after town or venue indicates up to date information.)

VK1

Canberra Neil Pickford, VK1KNP.

VK2

Bellingen ** Brian Slarke, VK2ZCQ, Ph (02)6655 1115, e-mail. bjslarke@midcoast.com.au. Brian organises the annual Urunga event.
Blue Mountains ???
Newcastle. ? Graham O'Brien, VK2FA.
Pt. Macquarie **. Oxley Amateur Radio Club. Secretary is Alan Nutt, VK2GD. e-mail anut@ozemail.com.au
Stroud (Nth of Newcastle). Brian, VK2BI . e-mail vk2bi@bmr.com.au Brian builds some equipment.

VK3

Melbourne **. Jack, VK3WWW, Club EMDRC. Ph (03)9873 2459, email

vk3www@alphalink.com.au Jack is the WIA Australian ARDF coordinator.
Bruce, VK3TJN, Ph (03) 9888 7509, email brucep@netspace.net.au Bruce is secretary of Victoria ARDF Group. Contact for details of planned Vic. Groups ARDF events. NB Planned in conjunction with some orienteering Metro series events. http://streeto.cable.nu/Sunday/Index.html
Ballarat. Events held at annual convention. Contact person is required.

VK4

Brisbane.
Redcliffe. Charlie Strong, VK4YZ, email smccab@ats.com.au
Sunshine Coast Radio Club. Ron Marchke VK4GZ is the only contact

I am aware of. More info required.
Ipswich. Peter Omerod, VK4CPW, email Peter.Omerod@defense.gov.au
Mackay. Brian, VK4DFD, Mackay Amateur Radio Club (MARC), email colman@orion-online.com.au
Rockhampton. Clive, VK4ACC, Rockhampton & District Amateur ARC (RADAR Club)
Sarina .. Ron, VK4BRG, Sarina Amateur Radio & Electronics Club (SAREC) ** Ph (07)4956 1155, email rongraham@magnet.com.au
Townsville. **. Don, VK4MC Townsville Amateur Radio Club (TARC) Ph (W) 4729 3314 email dterrace@ozemail.com.au

VK5

Mt. Gambier SERG
http://serg.mountgambier.org

Venues where Fox/Hidden Transmitter Hunting, or ARDF, takes place.

VK1

Blue Mountains???
Port Macquarie. **. Annual field day Queens Birthday weekend, June. 2 metre pedestrian, 2, 10 and 40 metre mobile events held.
Urunga. **. Sat. & Sun. Easter weekend, lots of hidden TX hunts, pedestrian & mobile events, 80m & 2m bands. Contact Brian, VK2ZCQ. (Bellingen)

VK3

Melbourne. **. Melbourne Fox Hunting Group, 3rd Friday of each month, 2m mobile events often using a "runner" with sniffer equipment in latter stages of the event. Contact Jack, VK3WWW.

Event start posted to major-domo mailing list. "subscribe melb-fox" in e-mail to majordomo@planet.net.au
Ballarat. Quite a number of events (various bands) are held at the annual convention. The last convention was late October 2001.The BARG home page is http://www.qsl.net/vk3bml/ More information required.

VK4

Sunshine Coast. Seem to be holding some events. Ron Marchke VK4GZ may be able to supply some info. Full info required.
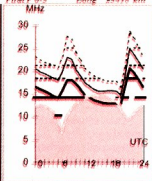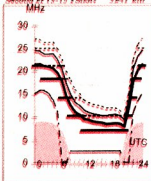*Rockhampton*. ** Annual fox hunting during JOTA at Seeoone Park. Also at Clearview See below.

Clearview. ** Combined Mackay, Rockhampton, & Sarina Club Event, Sat. & Sun. of May Day weekend, 3 or 4 events. 2 m pedestrian. Contact Ron VK4BRG (Sarina)
Mission Beach. **. Combined Cairns & Townsville Event, Queens Birthday weekend, 2 or 3 events. 2m pedestrian. Contact Don, VK4MC (Townsville)

VK5

Mt. Gambier. Queens Birthday weekend, organised by SERG ?? . Many mobile HF, VHF and pedestrian events, bands utilised are 80m, 40m, 10m, 6m, 2m, 70cm & 23cm.
Contact. SERG
http://serg.mountgambier.org

HF Predictions

by Evan Jarman VK3ANI
34 Alandale Court Blackburn Vic 3130

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.
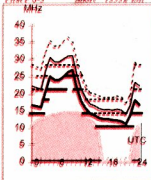
These frequencies as identified in the legend are:-
- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path, propagation mode and Australian terminal bearing are also given for each circuit.

These predictions were made with the Ionospheric Prediction Service program: ASAPS Version 4

May 2002

T index: 100

Legend

- UD
- 'E'-MUF
- F-MUF
- OWF
- ALF

Frequency scale

Time scale

Adelaide-Auckland 104
Second 2F13-15 2 Short   3241 km

Brisbane-London 147
First F 0-5   Long 23498 km

Adelaide-Cairo 286
First F 0-5   Short 13332 km

Brisbane-London 327
First F 0-5   Short 16525 km
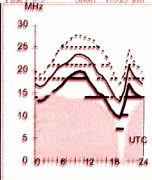
Canberra-Moscow 317
Second 2F13-24   Short 14481 km
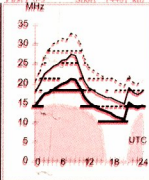
Darwin-Manila 340
Second 2F13-24   Long 3196 km
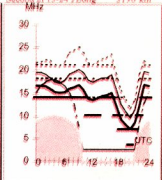
Adelaide-Honolulu 67
Second 4F7-12 4I Short   9160 km
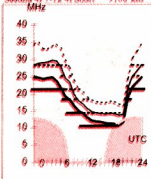
Brisbane-Ottawa 52
Short 15308 km
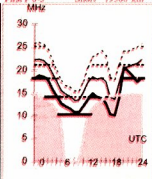
Canberra-New Delhi 305
Second 4F5-10 4E Short 10347 km
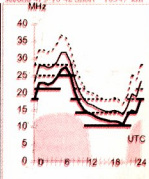
Darwin-Santiago 157
First F 0-5   Short 14422 km
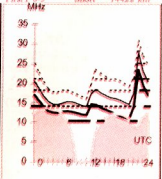
Adelaide-New York 67
First F 0-5   Short 17092 km
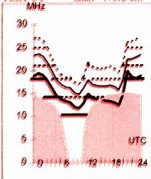
Brisbane-Tokyo 348
Second 3F6-12 3I Short 7159 km
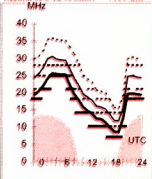
Canberra-Seattle 48
First F 0-5   Short 12709 km

Darwin-Seoul 349
Second 2F3-9 2I0   Short 5373 km

48
Amateur Radio, May 2002
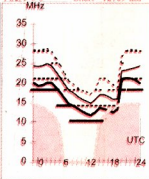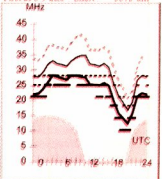
Row 1:
- **Hobart-Barbados** 134 — First F 0-5 Short 15825 km — MHz
- **Melbourne-Capetown** 222 — Second 4F5-6 4E Short 10318 km — MHz
- **Perth-Buenos Aires** 185 — First 3F3-5 3E0 Short 12591 km — MHz
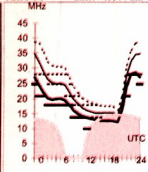- **Sydney-Budapest** 306 — First F 0-5 Short 15779 km — MHz
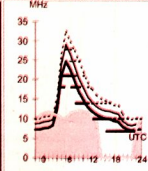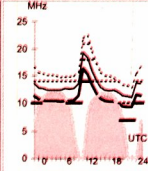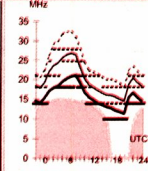
Row 2:
- **Hobart-Lima** 133 — First F 0-5 Short 12421 km — MHz
- **Melbourne-Miami** 94 — First F 0-5 Short 15584 km — MHz
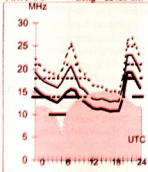- **Perth-Columbo** 312 — Second 3F10-15 3 Short 5768 km — MHz
- **Sydney-Chicago** 62 — First F 0-5 Short 14876 km — MHz
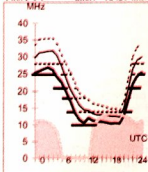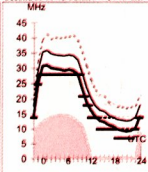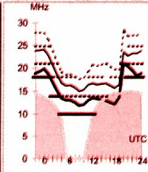
Row 3:
- **Hobart-London** 123 — First F 0-5 Long 22620 km — MHz
- **Melbourne-Senegal** 219 — First F 0-5 Short 16910 km — MHz
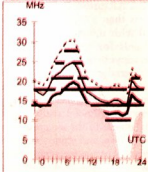- **Perth-Osaka** 17 — Second 3F5-10 3I Short 7684 km — MHz
- **Sydney-Jakarta** 294 — Second 3E11-13 3 Short 5498 km — MHz
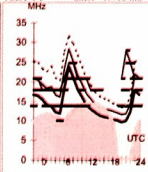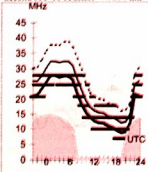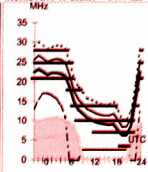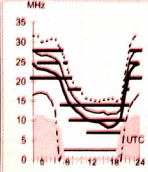
Row 4:
- **Hobart-London** 303 — First F 0-5 Short 17404 km — MHz
- **Melbourne-Suva** 65 — Second 2F9-12 2I Short 3914 km — MHz
- **Perth-Wellington** 119 — Second 3F12-13 3 Short 5255 km — MHz
- **Sydney-Pretoria** 230 — Second 4F3-4 4E0 Short 11063 km — MHz

Each chart axis labelled UTC with markings 0, 6, 12, 18, 24.
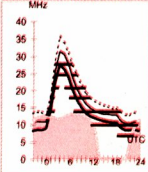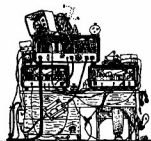
Ham Shack Computers

Alan Gibbs, VK6PG
223 Crimea Street, NORANDA WA 6062
Packet: VK6PG@VK6BBR.#PER.#WA.AUS.OC
Email: vk6pg@tpg.com.au

Part 14 – "Packet Radio"

In recent years, Packet Radio has become one of the most under utilised digital modes since the dawn of the Internet revolution. Packet still thrives today thanks to the numerous "unsung heroes" who fund, maintain, and operate the numerous BBSs and interconnecting packet nodes.

Some History...

Prior to the 1970s, radio amateurs were experimenting with RTTY (Radio Teletype) using surplus WWII telepriters and the world buzzed (diddled) with FSK (Frequency Shift Keying) around 14.085 kHz. Ham Shacks smelled of old automotive engine oil and AR operators tolerated the mechanical noise of whirling telepriters late into the night. Those were the good old days, Hi. However, RTTY was essentially a point-to-point keyboard-chat communications mode without the ability to store and forward messages.

Computers blossomed during the 1970s and RAs soon developed software that could automate complex routines, run programs, and store information. During the 1980s, the IBM compatible became common place and a "standardised" Disk Operating System (DOS) made information interchange much easier. Based upon the X25 protocol data packet standard, RAs adapted the X25 protocol for Amateur Radio use (called AX25) to enable interactive amateur computer communications between other RAs around the world. The packet boom exploded during the 1980s with thousands of BBSs (Bulletin Boards), nodes and digital repeaters connecting thousands of RAs worldwide.

Many RAs soon realised that a simple 2m FM transceiver and a TNC (Terminal Node Controller) could be used to "connect" with other packet users and leave messages in personal mailboxes. BBSs were established at strategic high ground locations to improve coverage, and could be used to "digipeat" connections to other nodes around the world.

Today, millions of messages travel between nodes every day – thanks to the many amateur radio BBS operators who freely give their own time and expertise for the benefit of other users.

Telnet operation was soon introduced allowing networks to "link" operators in different countries to one common server (called Ping-Pong). Once the Internet became more widely used, RAs connected their packet stations to the Internet by AX25-TCP/IP translation software. Now, operators could connect with a local BBS, hop onto the Internet, connect to a BBS in Europe or America, further link into a remote AX25 node, and finally connect with an RA in (say) Wisconsin USA and chat live between keyboards. In fact 20 or more RAs can link to a Ping-Pong Server in (say) London (called a Wormhole) and chat away between every continent in the world all at once at NO COST!

The Internet...

...is often blamed for the continuing demise of amateur radio. However, without the Internet, RAs would not be able to enjoy packet radio, IRLP (Internet Relay Linking Project), DX clusters, and a wealth of information interchange from the World Wide Web.

In fact, the Internet and affordable home computers has enhanced the wonder of amateur radio by supporting many new digital modes like PSK31, RTTY, and WSJT. It's the power of the Internet acting as a backbone used to transport AR data that makes packet radio a powerful operating mode in the new millennium.

Getting started with packet...

A recycled 486DX2-50 computer with a 250Mb hard drive, a single 1.44Mb floppy drive and a spare communications port will do fine when running DOS 6.2. The finest packet software ever produced is TPK 1.82 (4) written by a team of French RAs. For a TNC, again the best available is called the Blakpak marketed by the Australian Amateur Packet Radio Association (AAPRA)(6). The TNC can be purchased fully built and tested for $85, or $65 in kit form. These simple yet powerful packet modems are designed to work from packet emulation software (called BayCom 1.6)(5) installed onto your computer – plus TPK 1.82 described above for packet management.

Once the old 486 has been configured and connected to the BayCom modem and a 2m transceiver feeding a ¼ wave vertical antenna hanging from the shack window – the world is at your fingertips. Running DOS, TPK and BayCom, the 486 is "bulletproof" and runs much faster than the newer Windows applications without "blue screens" and general protection faults that seem to riddle most of the Windows operating systems.

TPK and BayCom software is "freeware" and written by RAs for general use by licensed operators worldwide. Surplus transceivers can be found in the AR press and club junk sales for less than $75, and a surplus 486DX2-50 with mouse, monitor and keyboard sell for less than $50 at computer recyclers. Thanks to the frenzied "upgraders" nobody wants a 486 computer anymore. This is excellent news for budding AR packet enthusiasts.

Our more experienced readers will doubtlessly object to the suggestion of the above solution, and argue that some other software is better, faster etc. When asked how they got started, they will tend agree with the writer.

Win 95/98/ME & XP users...

...may prefer a Windows environment for their packet software that will run in a pre-emptive multi-tasking background whilst other powerful programs handle station control and logging etc. Roger Barker, G4IDE is the author of WinPack (5), which has become the most popular Windows-based packet radio program worldwide. However, WinPack still lacks mature message storage facilities and requires extra software called WINPMail (5) to archive and retrieve messages and bulletins. Whilst the above system is stable and very popular, it tends to be clumsy to operate because messages are stored by message number without titles.

WinPack has some nice features. One example being to add the path to your Internet browser so users can send and retrieve HTML files and view them with the browser in full colour. WinPack can also be run with BayCom modems with other emulation software downloaded from the WinPack Web Site (5).

TNCs...

... include the popular Advanced Electronic Applications (AEA) PK232MBX, PK12 and PK900 modems available in the Amateur Press and junk sales. TNC2's MFJ1278's, Kantronics modems and many others are freely on the market these days. However, for operators who want to explore Amtor, Pactor, CW, RTTY and other modes used on the HF bands, a PK232MBX is a good investment being a multi-mode TNC that can be upgraded with DSP and FSK/PSK modes integrated in the one system. But if your interest is just 1200-baud packet messaging, then BayCom is the way to go these days, and let other software run your HF digi-modes from your computer sound card without a TNC at all!

Integrated software...

...is being used by experienced operators to run the station log, control up to three transceivers, turn the antennas AND operate packet all in one software package. YPlog (1) is a good example because it runs all the above features plus a packet terminal program that integrates with the log. The latest YPlog program features YPtty, an integrated RTTY package with hot keys for macro replays that can be "stacked" for

seamless RTTY operation, and the data is automatically entered into the log at the same time. This is delightful for avid contesters and DX hunters especially when the integrated terminal program is connected to a local DX cluster node. Watch the cluster, "click" on the DX station of choice and the call is logged, the transceiver changes to the correct mode and operating frequency, the beam automatically moves in the right direction, and you are ready to call the DX station with another "click" on the mouse button! AND – the report and contest serial number is automatically updated for each exchange AND YPlog keeps track of the multipliers and your contest score. (See *Ham Shack Computers*, No. 3 in June 2001 AR for more details).

To handle all of the above software integration a fast computer is needed. I use a Pentium 166 running Windows 98-second edition, and networked to a Celeron 500 running Windows XP acting as a server through to the Internet via a firewall. The systems allow simultaneous operation and live on-line connections to upgrade software and exchange files, pictures, and sounds to other operators and Web Sites worldwide. However, in a corner of the shack still lurks the "no cost" 486DX2-50 running BayCom and TPK linked to the local BBS, which runs faster than the XP server. It never fails and collects all my packet mail and downloads news bulletins automatically while I get on with working DX by just "clicking" the mouse on the Pentium 166.

But I'm not on the Internet!

Many readers get frustrated because most features in this magazine quote references to the Internet, and suggest that being "connected" is the right way to the future. For cash strapped RAs with an assertive interest in our hobby, packet radio is the next best thing – and it's CHEAP. Packet BBSs broadcast header lists (titles) of news messages like QNews from Queensland, software updates and answers to operational problems. Operators can "post" bulletins asking for help in finding a circuit diagram, bugs and hundreds of other activities. Most packet operators are willing to answer your questions in great detail, and future friendships flourish

from these contacts. Leave your packet running when you are out so that other operators can leave messages for you – AND no Telstra telephone connection fees or rental on landlines. All that's needed is an occasional "Thank You" to the sysops (system operators) who run the packet BBSs for all radio amateurs worldwide. They are radio amateurs just like us, and they run their systems as a hobby as we do. Without them, there would be no packet radio system, so please support them. USE or LOSE are the keywords in today's amateur radio world, and can be applied to allocated amateur radio frequencies, national societies, clubs and groups and the networks that help bring us all together: be they AR packet or Internet networks.

What's next?

If your Society or Club sends regular news to members by email on the Internet, ask them to also broadcast the information on the packet network as well. It costs nothing to do and might just help those who cannot afford Internet connections.

Ham Tip No. 14.

Why not ask a friend or your local club members to see their packet stations. Get your Club or Society for a lecture and demonstration. A simple packet station can be carried in a small suitcase, so there's no excuse for your Club or Society to ignore the wishes of members. If it does, membership will continue to diminish! The world is at your fingertips, don't let it slip away.

Ham Shack Computers, No: 15 for next month "Windows XP Review" deals with the deciding issues about upgrading your Windows 98/ME operating system.

(1) *Ham Shack Computers* Web Site: http://www2.tpg.com.au/users/vk6pg
(2) Ford, S. (1992). *Your Packet Companion*. ARRL; Newington.
ISBN: 0-87259-395-9
(3) Horzepa, S. (1989). *Your Gateway to Packet Radio*. ARRL; Newington.
ISBN: 0-87259-26-34
(4) TPK Home Page: www.f6fbb.org/f1ebn
(5) WinPack Home Page: www.peak.sys.co.uk
(6) Australian Amateur Packet Radio Association. (AAPRA) Home Page: www.aapra.org.au

73's de Alan, VK6PG

ar

Over to You

Reply to Ian Godsil, Contests Column, *Amateur Radio*, January 2002

Commenting on Clubs / Societies.

I am a member, and currently President, of the Elizabeth Amateur Radio Club/S.A.VHF Group. It's hard to get people to help or do things for the Club. As you have probably read in AR, our clubrooms are located at the Water Tower at Elizabeth South, The Tower did and still does require work to keep it up to scratch. The property is still owned by the SA Govt and looked after by the Playford (Elizabeth) Council. We have a perpetual lease on it. The people who do most of the work are "oldies" and are retired myself included.

Comments on contests.

In regards the Spring / Summer VHF contests. I believe that the Summer contest this year 2002 was held too close to the summer holidays, many people had only just returned from holidays. I suggest shifting it on a couple of weekends, say after the kids go back to school. Sure it's still in the Bush Fire season and this may make it difficult for "Grid Hoppers" to gain access to their chosen Locator spots.

The time period. The period from midnight to 6/8 o'clock Sunday mornings is a waste of time; you are lucky to get a contact, especially on VHF. A lot of people have other activities. How about making the contest, and others, go till later on the Sunday. Most can run a station for the Saturday afternoon or evening, or the Sunday afternoon. Break the time up into two 12 hour sections! In regards points for Bands and Modes.

What is wrong with CW contacts on VHF, UHF? Or does this put the "Z" calls at a disadvantage? Say double the points! Most UHF Ops can run SSB/CW. Look at the points you'd get for a 10.GHz CW contact .... !

As regards CW on UHF, is MCW acceptable on these bands? To key or turn the oscillator off on one of these units would cause stability problems, it would probably "Chirp" out of the bandwidth of some receivers! Sure with MCW you are not switching the RF carrier on and off as with HF CW but it does come out as an interrupted tone at the receiver! In awarding band multiplier points, as 2m/144MHz is more popular and there is more equipment available for this band how about only giving a Xl to 2m and X3 to 6m/50MHz, to encourage more activity on 6m. Once upon a time, no it's not a fairy tale' there was an extra point for powering the station from "Non Fossil Fuel". Solar Panels are now easily obtainable. We used to see pictures of people running "Pedal Power" in various Amateur publications.

In regards changing the rules on the Grid Hoppers

I thought the Locator Squares points were included to promote Portable contest operation? Does this section make it *too hard?* for the contesters who only want to drive to some easy location in their vehicles and run their FM equipment into a couple of whips. or is it jealousy! The eastern states might not win.... ? We saw what happened with the RD contest. VK5 won it for 7 years in a row, so they, the eastern states changed the rules.... ! I trust my comments are of some help in keeping contests active and popular. The interstate rivalry is good for all contests, but it gets a bit annoying at times in its nastiness. Have you ever been to some of the "Fox Hunts"? I have seen it get dangerous! I have been active in amateur radio for 50 yrs, 38 yrs licensed, and all my working life in the Electrical/Electronics field. I still enjoy all aspects of it, even at 68yrs of age. Some people just recently joining our ranks are amazed at my enthusiasm after all these years. I wonder what is going to happen to amateur radio in the future? Will the 21st Century with all its technology see its demise..! I am concerned but then think, I'll be a 'Silent Key' by the time this happens!

Thanks for running and organising the contests. Keep up the good work.

73 Steve Mahony VK5AIM The "Tooth Paste" station and one of the "Grid Hoppers".

Change in regulations causes frustration

I emigrated from Italy in 1949 at the age of 29 years and became an Australian citizen shortly after arriving. Considering my limited scholastic achievements from my old country (Primary school) I attended a TAFE run course in order to gain my Full Amateur Certificate of Proficiency, on the first try, some 20 years ago.

I am now retired and derive great pleasure in this hobby and have enjoyed many contacts with my native country. I have even had the pleasure of meeting the daughter of Giuliemo Marconi.

I often visit my native country Italy, and until 1999, I was always given a temporary permit for the Italian - Ministero Poste e Telecommunicazioni to operate my VK6QU station in Italy. But, since the year 2000, all permit applications have been refused. The reason I was given is that Australia does not implement the C.E.P.T. licence agreement. Due to this fact, no Australian radio amateur can legally operate in Italy. Can you imagine the frustration for a radio amateur that spends at least 4 months in Italy/Europe every year and not being able to operate his radio because of his Australian licence! Certainly this is not the way to attract new members to our hobby.

Incidentally - all Italian amateurs can operate in Australia with a suitable permit.

However if the situation does not change soon, I will start to lose interest in the hobby, and I will switch to the Internet. No morse, no theory, no regulations, no exams and no licence to worry about.

Could you please look into this matter for me? I hope to hear from you soon.

Ottavio Tonon VK6QU

Cc Minister for Communications - The Hon. Senator Richard Alston

Minister for Multicultural Interests (WA)-

Dr G Gallop

Over to you

Look after our "Old Timers"

Many of us amateurs know of fellow amateurs who through advancing age have had to leave their original homes and ham shacks and move into some sort of retirement home or much smaller residence either with their wives or on their own.

We then hear the usual complaint. "I am sorry I can not run my Amateur Radio Station", it may upset some of the other residents. What a shame, these amateurs have probably had an interest in amateur radio for 50 yrs or more, and have no other hobby.

I understood that these "Rest Homes" residents were supposed to enjoy their retirement and old age. Or do the management want the residents to just sit around and wither away in front of the TV!

It seems a shame that a hobby/interest that can assist in keeping one active and with so many interesting aspects is curtailed in this way.

Can our federal body try and remedy this problem? After all many of these amateurs have been WIA members their entire active amateur lives! What about the "Old Timers Club"? Many of their members will eventually fall into this category.

Another difficulty for the "Old Timers" who move into a smaller residence, unit or the like, is antennas. Put up anything like an antenna and there are complaints, visual and or RF. One has to resort to "Invisible or Clandestine" antennas. Remember also these Hams have lost their Shacks/

Workshops or the ability to build "Secret" antennas. Failing sight or an unsteady hand, also make it difficult.

We see suggestions for "Flagpole Antennas" in various publications to overcome these antenna problems. I know of NO commercial manufacturer of such antennas. Similarly with VHF Antennas. The only commercial VHF/UHF antennas are obviously non TV/FM antennas. What's wrong with a dual band Yagi Beam, say 3 Elements on 2 m and 6 Elements on 70cm, that looks like the Multi Band TV antenna? I seem to remember the old Radio and Hobbies magazine of some years ago, publishing a dual band 6 and 2 m antenna! A TV look-a-like antenna, with or without a rotator, vertically polarised would probably not be noticed! Just say it's for Digital TV or FM.

TVI is another problem in the unit type of accommodation. I have seen this with a local amateur and friend. He moved from his home of many years, to a local unit. He took with him a HF Transceiver and a Dual Band VHF/UHF Transceiver.

He asked me to assist him with antennas. That's when the troubled started. I loaned him a HF Mobile Whip, with simple mounting, along with a Dual Band VHF/UHF whip. With the HF whip planted in the front lawn, he only had to run 10 W/QRP power, on any band, some worse than others do, and TV sets started doing "Back Flips". 2m FM was the same. 5 W was all he could run.

70cm FM was the only band he could use; even then much more than 25 W produced "Funnies" on some TV sets. The main problem was the nearby TV sets were only running on "Rabbit Ear" antennas. No outside antennas so the set was running flatout, and highly susceptible to any RF in the vicinity. When spoken to the owners said "I'm a pensioner and can't afford an outside antenna"!

The fact that ACA want $60:00 to advise the viewers on the solution to their problem and the unit owners don't want to install a common Antenna and Distribution system, does not help the problem.

Our "Old Timers" deserve some help with this problem. Most present amateurs, with luck and good health will be Old Timers in the future, author included! So do you want to give up a hobby you have enjoyed all these years, and turn into a vegetable?

Steve VK5AIM...

PS. My wife Sue came up with a suggestion that local Radio Clubs adopt an "Old Timer" who has moved into a retirement village. Seek him/her out and offer to take them into their shacks or club radio station for some QSOs.

It could be worth a try.

Correction

March AR

There was a problem with photo credit bottom right P25.

The operator is Graham Mason VK3KMG and not Joan YF VK3UCM.

I think the tags identifying the photos may have got mixed up.

Apologies to the people concerned.

Editor

Silent Keys

The WIA regrets to announce the recent passing of:-

Peter Mulligan VK2ABH

W C Clarke VK2ASM

R (Ross) Weeden VK2PN

Note 1 Views expressed in the letters and opinion columns are those of the authors and do not necessarily represent the policy of the WIA.

2. Some of the letters may be shortened to allow more letters to be published.

Address letters to:

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HAMADS

FOR SALE ACT

- **Deceased Estate:** A complete station comprising - 1) A commercially made desk with three shelves over and a steel filing cabinet under. 2) PHILIPS UHF CB with magnetic mount aerial. 3) YAESU FT-2M transceiver with magnetic mount aerial. 4) TOKYO YO-901 Multiscope. Ditto. 8) MFJ Antenna tuner. 9) HEATHKIT oil-filled dummy load. Unmarked. 10) KENWOOD SW-200 power meter. 11) CANON 7252 desk calculator with printer. 12) Digital clock. 13) Hi-Mound semi- auto key and tone oscillator 14) KENWOOD R-2000 receiver. Immaculate. 15) Trap vertical. 14-AVQ stainless. 16) All interconnect cables. Items are new in appearance, and operator's handbooks are available. Clear title guaranteed. Call Harvey VK1AU on Phone 02 6281 3607 (daytime, please) for further details; for an appointment to view or to make a reasonable offer. E-mail: colharv@telstra.easymail.com.au, until 11 May 02.

WANTED ACT

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- **WARBIRD DISPLAYS:** Rx's, Tx's, modulators, racks, mounts, remotes, some complete COMMAND setups as used in WWII operations. Brian, VK2GCE, Phone 02 9545 2650 or [preferred] brianclarke@idx.com.au

- On behalf of the Wagga Amateur Radio Club: YAESU FT-747 HF radio c/w mic, manual and is boxed $600.00 o/no. YAESU FT-101Z HF radio c/w desk mic $300.00 o/no. YAESU FT-840 HF radio (no FM) c/w mic $850.00 o/no. FT-757GX HF radio c/w mic, manual and FRB-757 relay $450.00 o/no. FL-7000 solid state HF amplifier (600w out) $2000.00 o/no. For more details contact: John vk2yw@wia.org.au or Michael vk3tdv@bigpond.com

WANTED NSW

- **AMERITRON** mobile linear amp. solid state, Model ALS-500MX. Must be in GWO. John VK2JJS QTHR, Phone 02 9498 2248
- **Handbook** for YAESU HT FT-209RH and IC SN7848B for audio project. VK2IGS, e-mail igray@norcom.au
- **SUB MINIATURE VALVES:** EL70 (or EL71), 6021, 6111, 5718. Will consider equivalents or near equivalents. Contact Pat Brennan VK2ABE, PO Box 158, Tamworth NSW 2340
- A-510 parts: instruction plate, counter-poise and earth-spike, feeder for dipole. Can exchange complete and part radios. Brian, VK2GCE, Phone 02 9545 2650 or [preferred] brianclarke@idx.com.au
- **Shack tidy up:** I have too many 19" rack mounted pieces of radio gear on the floor that need to be in a rack. If you have a rack that's too big, I could swap a smaller one. What I need is one about 4'-6" tall, 20" deep; the one to swap is 3'-6" tall and 30" deep with removable front, rear and side cover panels in brown/black with cream edges and castors. Brian, VK2GCE, QTHR, Phone 02 9545 2650 or [preferred] brianclarke@idx.com.au
- Desperately wanted by the Blue Mountains Amateur Radio Club: A copy of a service manual for an STC MTR-10 UHF transceiver. If anyone can help please contact Adrian Clout VK2BFN, Phone 02 4758 6797 or 0408 604 366. PS Just a circuit diagram would be extremely helpful

FOR SALE VIC

- **WARBIRD DISPLAYS:** Rx's, Tx's, modulators, racks, mounts, remotes, some complete COMMAND and RADAR setups as used in WWII operations. Bill, VK3AQB or jikajika@net2000.com.au
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WANTED QLD

- 70 centimetre pre amplifier Bernie VK4OZ QTHR Phone 07 5532 4078, email-VK4OZ@austarnet.com.au
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Oscar is not an expert in your field — he thinks Megahertz is what happens when he stubs his toe on a rock.
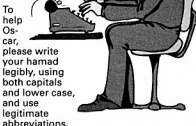
To help Oscar, please write your hamad legibly, using both capitals and lower case, and use legitimate abbreviations.

This will reduce the chance of errors being published, which inconveniences everyone.

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PLAN AHEAD

Remembrance Day Contest
17 & 18 August 2002

ALARAMEET
October 5 & 6, 2002,
Murray Bridge, South Australia

JOTA and JOTI
October 19 & 20, 2002

Sunspot Numbers

Monthy average Mar 2002: 98.1
Smoothed Sunspot Number Sep 2001: 114.1
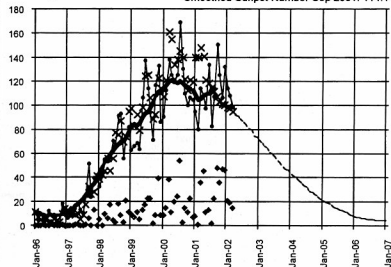
Flares > M1	× T index	▬▬ SSN
···· Prediction	— Sunspot Number	Current Cycle: 23

Drawn from monthly data provided by the Ionospheric Prediction Service

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The Wireless Institute of Australia represents the interests of all radio amateurs throughout Australia. National representation is handled by the executive office under council direction. There is one councillor for each of the seven Divisions. This directory lists all the Divisional offices, broadcast schedules and subscription rates. All enquiries should be directed to your local Division.

Broadcast schedules All frequencies MHz. All times are local.

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GPO Box 600, Canberra ACT 2601

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Secretary	Peter Kloppenburg	VK1CPK
Treasurer	Linden S Orr	VK1LSO

VK1WI: 3.590 LSB, 146.950 FM each Thursday evening from 8.00pm local time. The broadcast text is available on packet, on Internet aus.radio.amateur.misc news group, and on the VK1 Home Page http://www.vk1.wia.ampr.org

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VK2 Division New South Wales
109 Wigram St, Parramatta NSW
(PO Box 432, Harris Park, 2150)
(Office hours Mon-Fri 1100-1400)
Phone 02 9689 2417
Web: http://www.ozemail.com.au/~vk2wi
Freecall 1800 817 644
e-mail: vk2wi@ozemail.com.au
Fax 02 9633 1525

President	Terry Davies	VK2KDK
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From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday at 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc, and on packet radio.

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40G Victory Boulevard   Ashburton VIC 3147
(Office hours Tue 10.00 -2.30)
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Web: http://www.wiavic.org.au
Fax 03 9885 9298
e-mail: wiavic@wiavic.org.au

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Fax 07 3266 4929
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VK4WIA broadcasts on 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 10.135 MHz SSB, 14.342 MHz SSB, 21.175 MHz SSB, 28.400 MHz SSB, 29.660 MHz FM (rptr), 147.000 MHz, and 438.525 MHz (in the Brisbane region, and on regional VHF/ UHF repeaters) at 0900 hrs K every Sunday morning. QNEWS is repeated Monday evenings, at 19.30 hrs K, on 3.605 MHz SSB and 147.000 MHz FM. On Sunday evenings, at 18.45 hrs K on 3.605SSB and 147.000 FM, a repeat of the previous week's edition of QNEWS is broadcast. Broadcast news in text form on packet is available under WIAQ@VKNET. QNEWS Text and real audio files available from the web site

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Phone 0403 368 066
web:http://www.sant.wia.org.au
email: peter.reichelt@bigpond.com

President	David Minchin	VK5KK
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VK5WI: 1843 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.800 FM Mildura, 146.900 FM South East, 146.925 FM Central North, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (RTTY) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. The repeat of the broadcast occurs Monday Nights at 1930hrs on 3585kHz and 146.675 MHz FM. The broadcast is available in 'Realaudio' format from the website at www.sant.wia.org.au Broadcast Page area.

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VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) M William (Bunbury), 147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900,147.000, 147.200, 147.250 and 147.350 MHz..Also in "Real Audio" format from the VK6 WIA website

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Phone 03 6234 3553 (BH)
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VK7WI: 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.
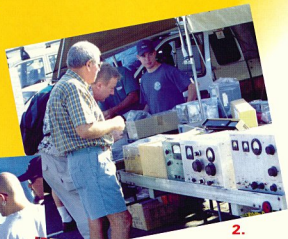
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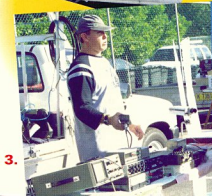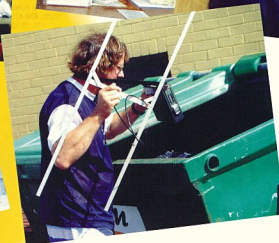
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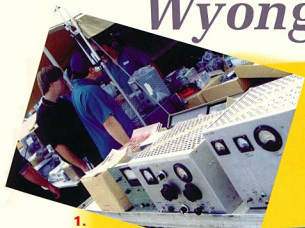
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